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Central Hamilton Residential
Development Alternatives

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CENTRAL HAMILTON

Residential Development Alternatives

A study prepared for the
City of Hamilton by
Diamond and Myers,
Architects and Planners.



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CENTRAL HAMILTON Residential Development Alternatives

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1

Introduction

The conventional wisdom is that the economics of development lead inevitably to high-rise. Given the cost of land and the cost of labour, money and materials, it is assumed that the only way a developer can make a fair return on his money and still keep rents reasonable is to cram as much living space as possible onto each building site.

This report, however, demonstrates that this common belief is not necessarily justified.

Two separate blocks in the Durand Neighbourhood were studied. Both blocks are in the path of redevelopment. On one of them developers have already assembled most of the land and have begun demolition.

For both blocks, three alternative forms of development, ranging from consistent high rise to a mixture that includes maintaining and renovating older houses and building a minimum of new, low-rise apartments, have been examined.

It was found that while the number of apartments decreased as the scale of buildings went down, the return on investment remained **the same**, given the marginal unit increases shown.

Most importantly, rents did not go up appreciably. The size and the mixture of the suites stayed the same in each alternative. It was found that the difference in rent between a bachelor apartment in the highest high-rise and a bachelor apartment of exactly the same size in a mixture of renovated houses and new low-rise buildings would be only \$10 per month. For a three-bedroom apartment, the difference would be only \$14 a month.

Also included in this report is a fourth alternative in which all existing buildings are retained. Even here it was found that

the developer could keep the rents reasonably competitive and still earn **the same return** on his investment as he could with high-rise.

We believe this report provides good reason to reconsider development policies in the Durand Neighbourhood in particular, and for Hamilton in general. Certainly there is strong evidence that the public wants these development policies reconsidered.

In 1952 the City of Hamilton passed a zoning code designed to create an increase in density from the slopes of Hamilton Mountain to City Hall. It was to end with a ring of high-rise apartment houses surrounding the downtown core. This plan was formalized in 1958. This was a pattern that had been followed in many cities in North America. What the planners who laid it out did not — and probably could not — foresee was the public response to block after block of new, high-rise apartments. They did not anticipate the kind of response recorded in the survey shown on page 2 .

It is clear that a growing number of people do not like high-rise buildings at all. They feel that high-rise buildings dominate the skyline and overshadow the streets, are unsuitable for children, turn the street into a wilderness of "landscaped open space" and that they contain apartments that are too small, too impersonal and too alienating. Anyone who has ever attended a ratepayers' meeting in a neighbourhood where a developer proposes to build a high-rise apartment house will know how endless and bitter are the complaints people make about these buildings.

It is not the purpose of this report to deal with the merits of high-rise development. However, it is important to note

here that what people **feel** about a style of building and character of neighbourhood is as real as the building or neighbourhood itself. It is a fact of life that architects, planners and policy makers must live with.

The various public reactions to high-rise might be summed up thus: when a neighbourhood is dominated by high-rise apartments, the neighbourhood community ceases to exist. It should be clear that a sense of community is crucial to urban health, but "a sense of community", is, of course, difficult to define, in fact a sense of community is often only recognized by its absence.

However, one way in which high-rise buildings commonly weaken neighbourhoods is by standing remote from the sidewalk and street, unlike the traditional pattern in which urban streets were consistently lined with buildings, and therefore human activity. Streets should be more than conduits for automobiles. Streets can be places of business and places where people meet and respond to each other. Therefore, in seeking alternatives to high-rise, we have also sought conceptual designs which would allow developers to preserve the street-scape and thus the neighbourhood.

The aim of this investigation was to consider alternatives to high-rise development. We believe that the three alternatives presented here meet a most important criterion, that of the market place. The fourth alternative, while slightly more expensive, creates the most acceptable environment of them all.

The report is divided into three sections. **The Background** section deals with general development conditions in Hamilton and in the Durand Neighbourhood and explains how the city's zoning code and development policies encourage

developers to make their buildings as narrow and as high as possible.

The Middleground explains how these general conditions apply to the particular blocks in the Durand Neighbourhood that were chosen for study.

The Foreground first shows the kind of high-rise development most likely to take place on these blocks under present conditions. Secondly, two alternatives to present practice, consisting of various combinations of new low-rise buildings and renovated existing houses, are shown. Finally, there is a fourth, idealized alternative involving the retention of all the existing houses.

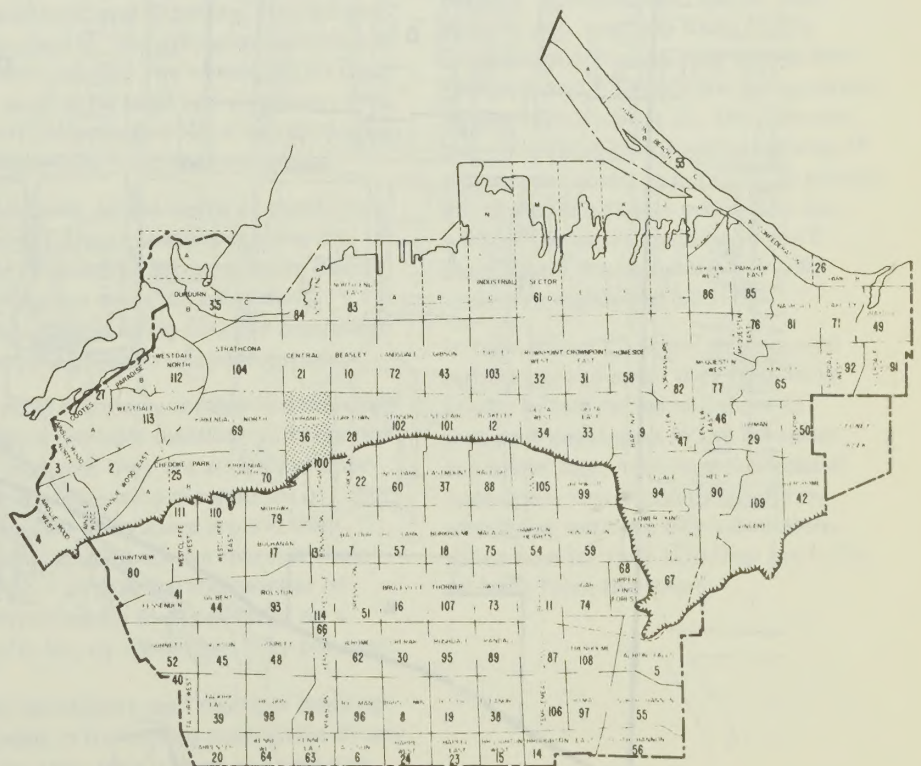
Also provided is a summary of conclusions and recommendations.

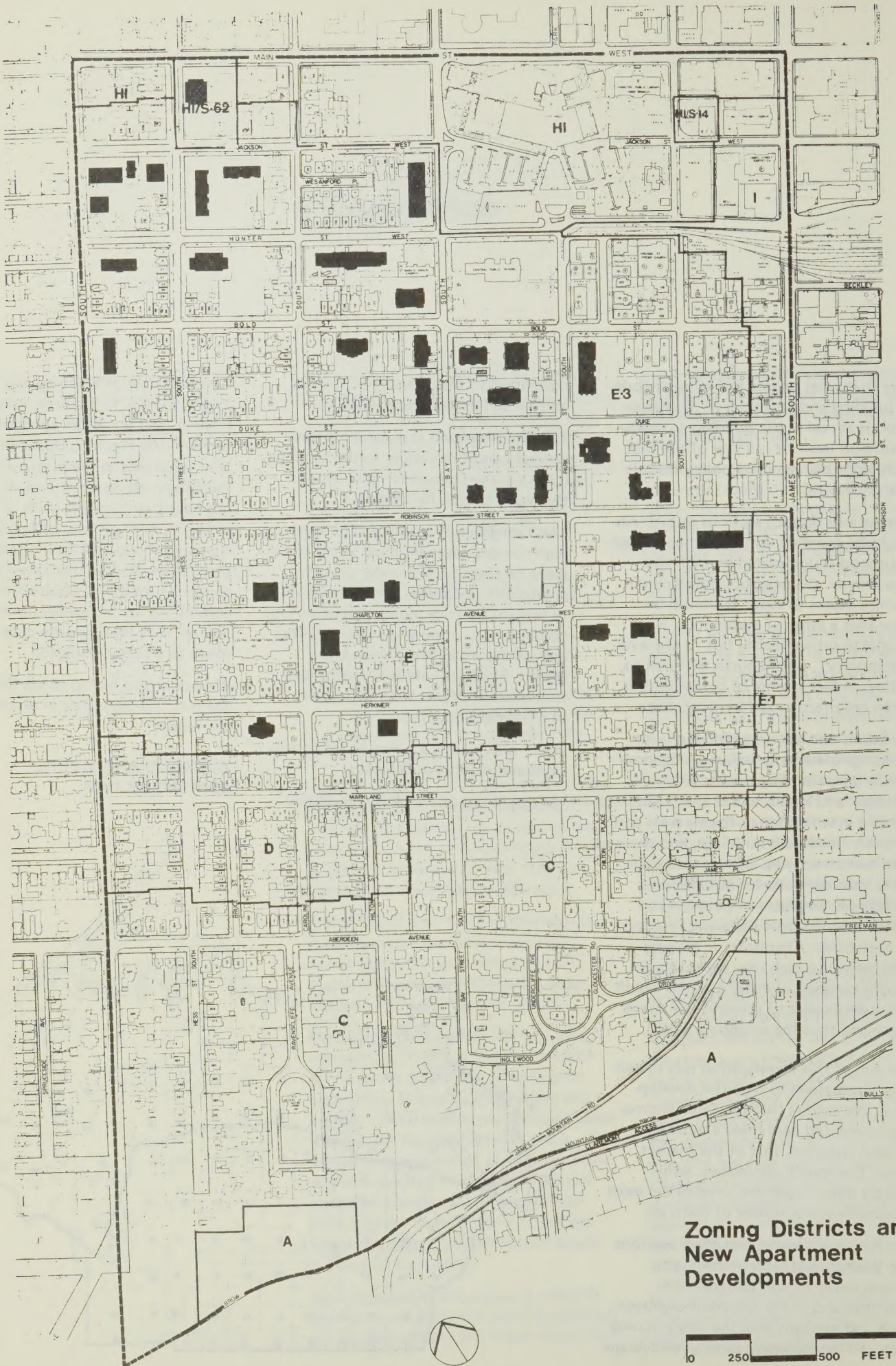
We would like to thank Mr. R. Bailey,

Commissioner of Planning and Secretary-Treasurer, Mr. T. Ramirez, Principal Planner, and Mr. Brian Klotz of the City of Hamilton Planning Department for their assistance in the preparation of this Study. However, the study would not have been possible at all without the concern of the citizens of the Durand Neighbourhood and their representative committee. Special thanks are accorded to Mrs. Diane Dent, Chairwoman of the committee, whose energy, enthusiasm, and tenacity have already contributed much to a better Hamilton.

We would also like to thank David Lewis Stein for his assistance in draughting the report.

DIAMOND AND MYERS
SEPTEMBER 1973





**Zoning Districts and
New Apartment
Developments**

Zoning

Background

Because of present zoning, parts of Durand neighbourhood are changing dramatically from its present character of low scale residential to very large scale residential buildings.

Since 1958 Durand has been divided into four distinct zoning districts. Each district has different regulations about the size of new buildings and what uses can be made of them. But all four have one stipulation in common: they all say quite clearly that Durand should remain a residential neighbourhood.

However, there are many different interpretations of the word "residential." And there is a wide gap between the intentions expressed in zoning regulations and the reality that the regulations create.

The southern portion of Durand is covered by C and D zoning. As you can see on page 3 the uses allowed here are few and specific. The homes in this district tend to be large and well kept. The owners are probably right in considering their area safe from redevelopment.

Immediately to the north of them is an E district. Here the story is quite different. E districts allow multiple dwellings, another term for apartment houses. People living here are beginning to feel the pressure of redevelopment.

The most northerly section is designated E3. Here multiple dwelling units are not only allowed, they are actively encouraged. By increasing the amount of landscaped open space around their projects, developers can increase their density — in practice the number of apartment units they can build on a specific lot, by more than fifty per cent.

When developers see "multiple housing" included in the zoning description of any district they take it as an invitation to

begin assembling land and they go first to areas where they can put up the highest buildings.

The results are predictable and inevitable.

The E3 district is at present almost entirely taken up by high rise apartments. Developers are moving into the E districts. It will not be too long until they are hard against the C and D districts.

On the following pages we have listed the regulations in each zoning district and the constraints — or, more often, the lack of constraints — developers face when they want to put up new buildings.

It should be noted that in the C and D districts controls on gross floor area are not needed. The size of the building is held down by an 'envelope' consisting of the setbacks and the height restriction. The same restrictions hold true for one, two and three family houses in the E areas, **apartments** however in E and E3 zones are **not** governed by any restriction at all. They are controlled only by maximum gross area. If a developer could acquire a large enough lot, it would be quite possible to put a 20- or 25-storey building in the E areas where the designation is only "site area multiplied by 1.7."

In both E and E3 zones the required setbacks are so small they have little effect. In fact, as we will show in section 4 developers in the E3 zones can often meet minimum landscaped open space requirements simply by complying with the city's directions about how far their buildings are to be set back from the street.

ALLOWABLE USES IN DURAND

RESIDENTIAL	INSTITUTIONAL	PUBLIC
C Districts		
Single family dwelling	Day Nursery	School Library Art Gallery
Converted Dwelling (2 Units)		Museum Observatory Recreational facility

D Districts — as in C above and

Two family dwelling	Children's shelter	City yard
Row dwelling	Nursing Home	University
Home for the elderly	Maternity boarding	
Converted dwelling (3 Units)	House	
Lodging House		
Boarding House		

E Districts — as in C and D and

Three family dwelling	Public hospital	Private clubs
*Multiple dwelling	Private hospital	
Student residence	Home for aged or infirm	
Tourist home	Charitable institutions	

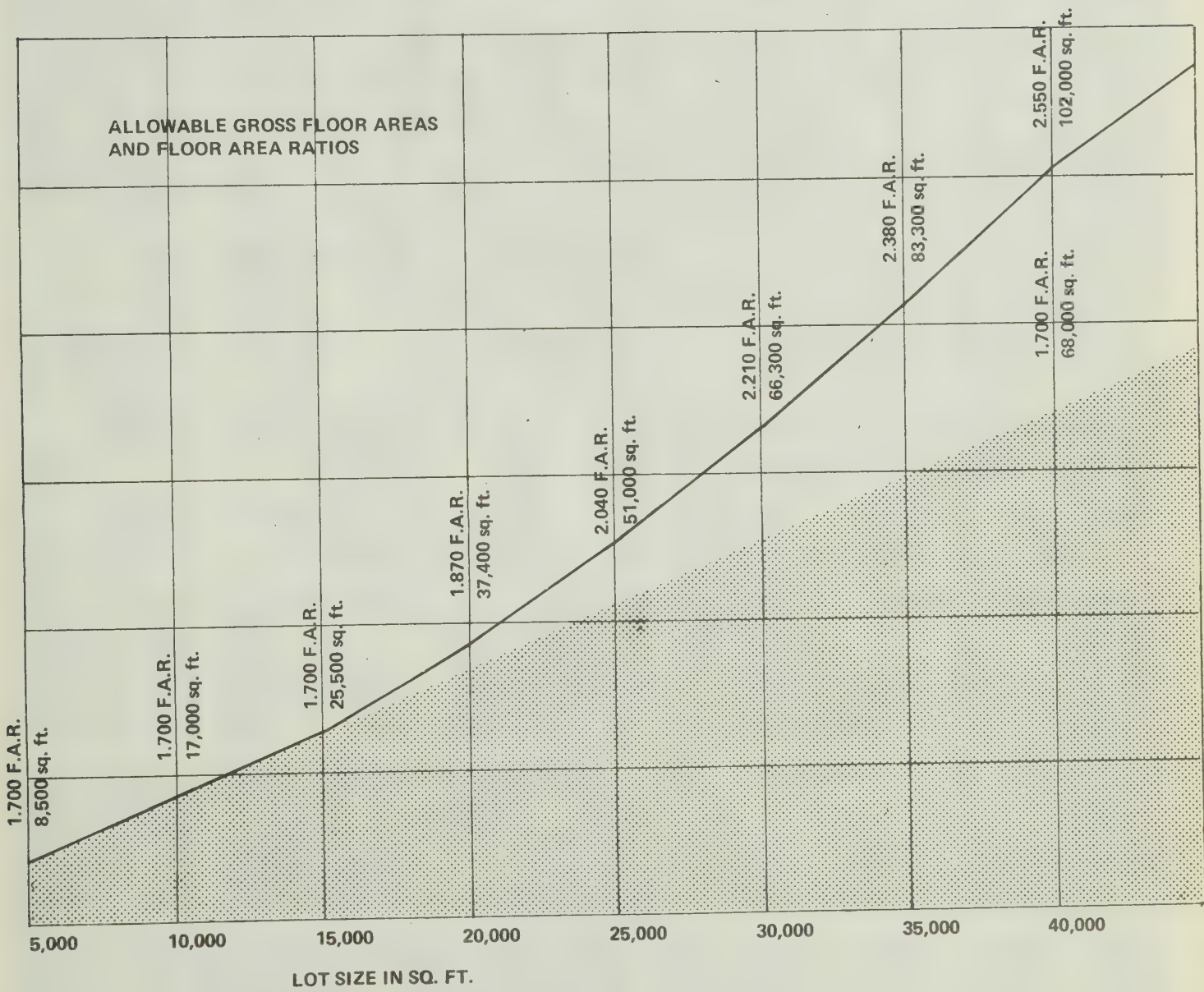
E3 Districts — as in C, D, and E

*The following are allowed within a multiple zoning designation: Beauty Parlour, barber shop, dwelling: shoe shine parlour, tobacconist, valet service, vending machines, laundry and dry cleaning depot, and a retail variety store (not over 1000 square feet, and only in buildings with over 100 units).

Building Restrictions in Durand

Floors or Height	Building Setback	Landscaped Area	Gross Area
C Districts			
maximum 2 1/2 storeys or 35 feet in height	minimum front, side and rear yards	none required	no maximum
D Districts			
maximum 3 storeys or 45 feet in height	minimum front, side and rear yards	none required	no maximum
E Districts			
maximum 2 1/2 storeys or 55 feet in height for 1, 2 & 3 family dwellings only	minimum front, side and rear yards	none required	site area multiplied by 1.7
E3 Districts			
no height or storey restriction	minimum front, side and rear yards	minimum 25% of site (bonus for excess)	site area multiplied by factor (varying from 1.7 to 2.55 with site area)

Floor Area Ratio Table For "E-3" Multiple Dwelling District





2

Patterns of Development

The strict zoning controls in the C and D districts have kept the streets flanking Aberdeen Avenue quiet and lined with trees. In fact the zoning specifications for these districts are subtitled "urban, protected, residential." Clearly these zoning requirements have achieved the intended goals.

However, the intentions of zoning regulations for E and E3 districts are much different. The regulations are subtitled "multiple dwellings" and "high density multiple dwellings." In these areas one finds:

- Houses still occupied by owner and their families and in good condition.
- Houses occupied by poor families who cannot afford to maintain them.
- Houses purchased by developers and speculators and converted to flats and rooming houses.
- Houses that absentee landlords have allowed to run down.
- Houses vacated and boarded up.
- Demolition, derelict, vacant lots.
- Excavation and construction.
- High-rise apartment houses.

These are the classic symptoms of an area designated for redevelopment. These conditions will prevail until the area is completely redeveloped. This process can take years and even decades to complete.

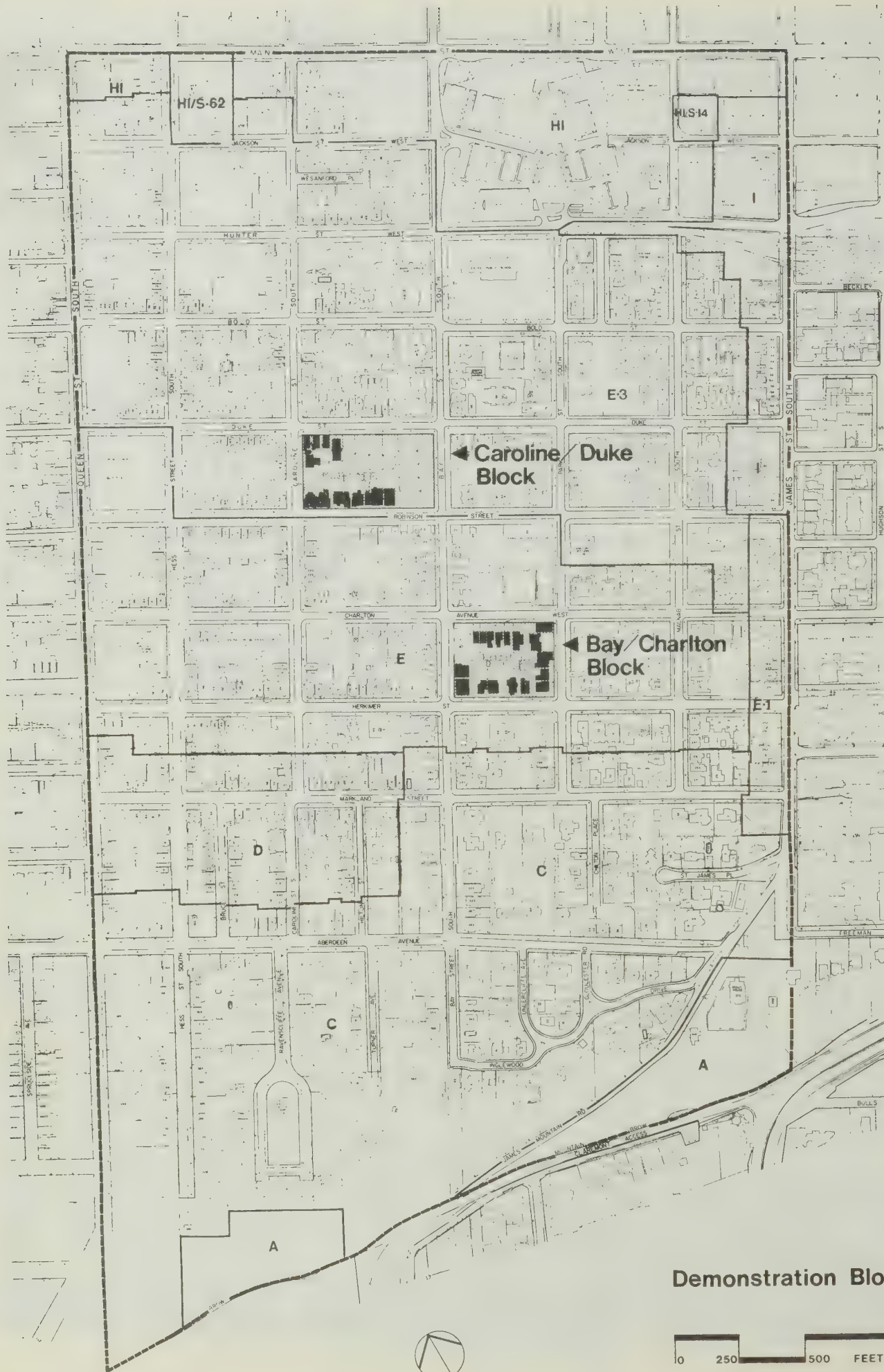
When an area is undergoing such a process residents and tenants of such an area are reluctant to spend money on their property. Developers generally buy land, not houses.

Thus it is not surprising that houses, which are expected to be torn down, are not maintained. As the process continues, speculators buy up houses, and families are forced to move out. The result is to unstabilize the neighbourhood.

Given the present zoning, and given the desire of developers to build to maximum density, the process and effects described above are unavoidable.

The only way to reverse this process is to make changes in the zoning requirements. These changes might include:

- Eliminating the bonus system
- Lowering maximum density levels
- Changing setback requirements
- Establishing height restrictions
- Reducing parking requirements
- Controlling the use and appearance of vacant lots



Demonstration Blocks



3

The Demonstration Blocks

Two blocks, to show what effect the zoning and general patterns of development have on particular blocks in the Durand Neighbourhood, have been selected:

In the E district, the sample block is bounded on the **west** by Bay Street, on the **north** by Charlton Street, on the **south** by Herkimer Street and on the **east** by Park Street.

For ease of reference this block is called the Bay/Charlton block.

In the E3 district, the study block is bounded on the **west** by Caroline Street, on the **north** by Duke Street, on the **south** by Robinson Street, and on the **east** by Bay Street.

This block is referred to as the Caroline/Duke block. Development on this block can, of course, claim the benefits of the bonus system. Both sample blocks are shown in the drawing opposite.

On both the sample blocks developers have begun assembling land and making building permit applications. The four development alternatives produced for this study range from complete demolition and redevelopment under the present zoning to an idealized condition in which all the existing houses are retained.

These four schemes do not, of course, exhaust all possible alternatives to high-rise. But they do cover a wide enough range for a general discussion of potentials.

In order to provide some idea of what these different alternatives would look like if they were actually built, they have been illustrated in axonometric drawings. An axonometric drawing is simply a true to scale drawing in which all three dimensions can be measured. And, of course, the data relevant to each alternative has been included.

In the study of the Caroline/Duke block the first three alternatives identify the applicable density bonuses. Before showing how this variable affects the alternatives studied an examination of the bonus system is in order.

The bonus system has been a vital part of development in Hamilton. An exploration that clearly reveals the implications of such a system, before going on to discuss alternatives to high-rise, is thus necessary.

Alternative no.	Building height	Site density	Demolition
1.	high rise	maximum allowed	demolish all existing buildings
2.	low rise	maximum allowed	demolish all existing buildings
3.	low rise	maximum allowed	retain all existing buildings
4.	low rise	half of allowed	retain all existing buildings

4

Bonus Systems

The bonus system was designed to attract new development and set certain conditions as desirable for apartment buildings. If a developer meets these conditions the city rewards him with a density bonus. In practice this bonus increases the number of apartment suites he can construct. The following section will show how striking the effects of the bonus system can be.

In the E3 districts, the city employs two different formulae for awarding bonuses.

A developer can gain a bonus by increasing the size of his lot beyond 15,000 square feet. The normal floor area ratio — the ratio of floor space to site area — is 1.7 in E3 districts but if the developer can increase the size of his lot to 40,000 feet or more, he can get a density bonus that will bring his F.A.R. to a maximum of 2.55, (see table on page 6) that is, an increase of **fifty** per cent.

Obviously, this bonus encourages developers to assemble large holdings of land. And it means that buildings are likely to become high rise.

In the E3 districts, the developer also gets an additional bonus by increasing the amount of landscaped open space. Landscaped open space is an umbrella definition that covers grass, walks and outdoor recreation facilities such as tennis courts. The landscaped open space bonus works on a two to one formula. For every foot of landscaped open space the developer provides over the required minimum 25 per cent of the lot, he is rewarded by two additional feet of floor space.

This formula encourages the developer to cover as small an area of his lot as possible with buildings and to put parking underground. It thus encourages

him to make his building as narrow and as high as he can, and use the subsurface for parking, thereby diminishing the potentials of tree planting.

The following are five examples of the physical and economic effects of these two bonus systems. A single property in the E3 district has been used for these illustrations. The property was taken from one of the study blocks examined in this report.

Existing Site

site area: 201' x 136'	27,340 sf
base F.A.R.	2.12
gross floor area:	57,960 sf
required landscaped area (25%)	6,840 sf

Example 1

This is a hypothetical case, in which the building is allowed to cover the entire site, after demolition of the existing houses. As the allowed gross floor area for this site is 2.12, this building would be 2.12 storeys.

Example 2

If the city landscaped open space requirements are taken into account, then the building may occupy only 75 per cent of the site.

$$2.12 \times \frac{100}{75} = 2.83 \text{ storeys, or some } 30'-0'' \text{ in height.}$$

For a three storey building, the setbacks must be, by formula, as follows (the figure of 400 does not appear to have any discernable or functional base):

$$\text{side} = \frac{\text{building height} \times \text{length}}{400}$$

$$\text{front} = \frac{\text{building height} \times \text{width}}{400}$$

The height has been determined in the above calculation. An assumption on length and width must now be made: say 171' x 112', that is a side set-back of 15'-0" and front and rear setbacks of 12'-0".

Therefore this formula may be computed thus:

$$\text{side set-back} = \frac{30 \times 171}{400} = 12.8 \text{ feet}$$

$$\begin{aligned} \text{front and rear set-back} &= \frac{30 \times 112}{400} \\ &= 8.4 \text{ feet} \end{aligned}$$

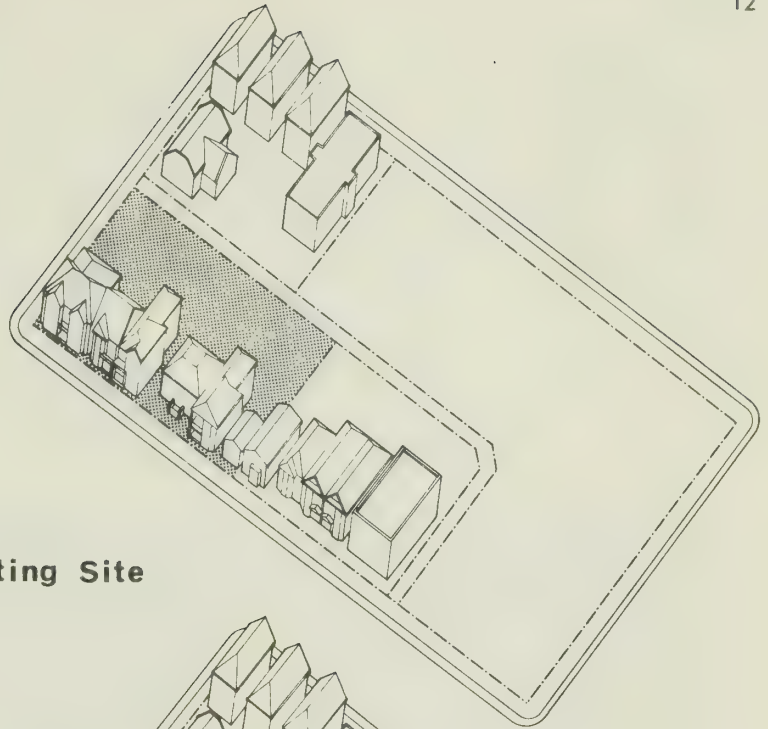
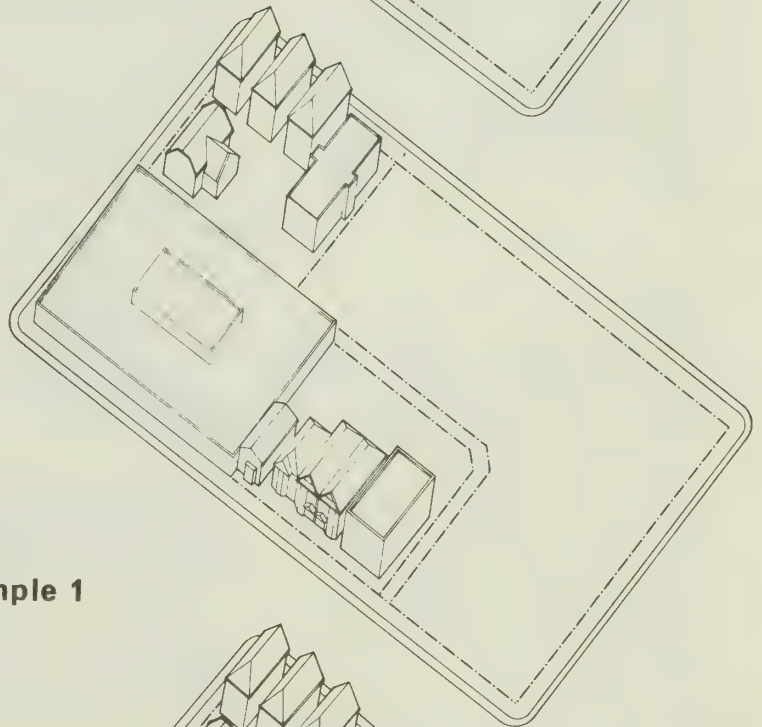
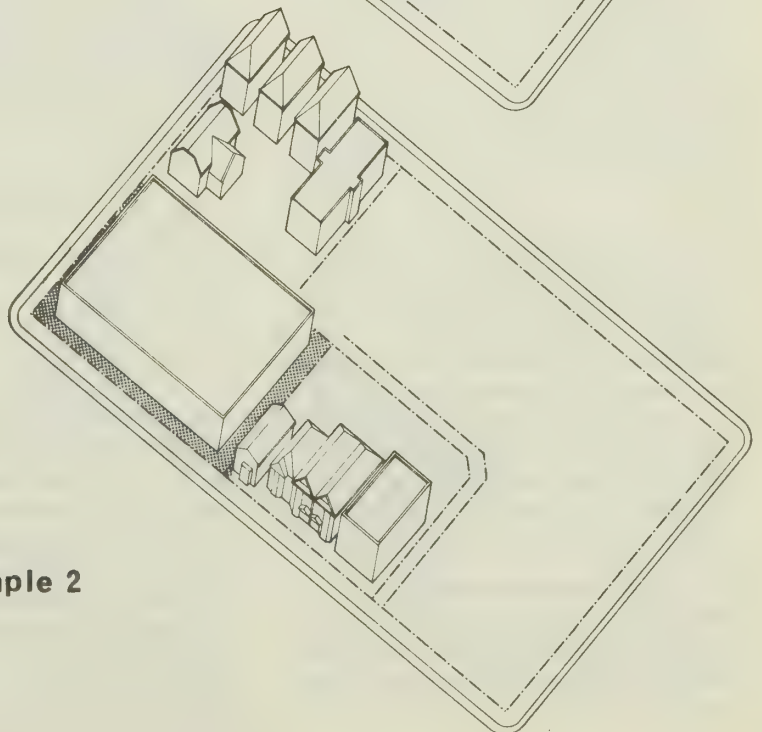
The assumed set-backs, then, are larger than the minimum required, and would be acceptable. It is also important to note that the set-backs of 12 and 15'-0" themselves provide an area which is in **excess** of the required minimum landscaped open space.

Required open space:

$$25\% \text{ of } 27,340 = 6,840 \text{ square feet}$$

Open landscaped space provided:

site area	27,340 square feet
building area	
per floor	$\frac{19,322}{8,018 \text{ square feet}}$

**Existing Site****Example 1****Example 2**

Some of this 8,018 square feet might be used for drives and other areas which do not qualify as landscaped open space, and the example given is only approximate in its dimensions. However, the example serves to illustrate that the minimum open space requirement is low, when measured against the other provisions which themselves make open space necessary.

Example 3

The preceding example is plainly a theoretical one. It is unlikely that a developer would build an apartment house with these dimensions. But this example is useful because it shows how calculations of open space are made and how it is entirely possible for a developer to satisfy the city's open space requirements and even claim a bonus for additional open space merely by setting his building back the legally required distance from the sidewalk.

The following example illustrates how the bonus system works with an actual development application on the same site.

In this proposed development, the building would have an area of 5,870 square feet per floor with overall dimensions of approximately 50' x 117'. The total amount of landscaping provided, in excess of the minimum required 25 per cent, is shown as 17,000 square feet. This yields a bonus of 34,000 square feet. This bonus represents, in this example, an increase of almost six storeys to the almost 10 storey building.

Without the benefits of this landscape bonus the developer would require an additional 16,000 square feet of property to yield the equivalent amount of floor space.

Since the value of the land on this particular block is about \$13.50 per square foot, the bonus represents an equivalent land value of \$216,000 to the developer.

Example 4

The size of buildings in Hamilton is determined by the maximum gross floor area, the area of all floors of the building including walls as allowed by the by-law. But in E3 districts, as pointed out, the ratio is not static but increases with the size of the site. Land areas of up to 15,000 square feet will have an F.A.R. of 1.7. This ratio accelerates up to a maximum of 2.55 F.A.R. for lots of 40,000 square feet and larger.

The following example examines the effect on physical development of the property at the north-east corner of Robinson and Caroline Streets. This site, about 136 feet by 201 feet, contains 27,343 square feet, and thus does not reach the ultimate F.A.R. available to sites of over 40,000 sq. ft. A development for the site has been proposed as follows:

site area:	
201' x 136' (approx.)	27,343 sf
base F.A.R.	2.12
base gross floor area:	57,967 sf
landscape bonus	34,000 sf
total gross floor area	91,967 sf
no. of floors (apartments only)	15.66

To the east of this site, however, there are four additional properties which, so far, are under separate ownership. Taken together these properties, 120 to 126 Robinson Street, represent a potential site of about 13,600 sf land area. Using the figure of \$13.50 for property on this block, this area represents a value of \$183,600.00

To investigate the effect of the increasing

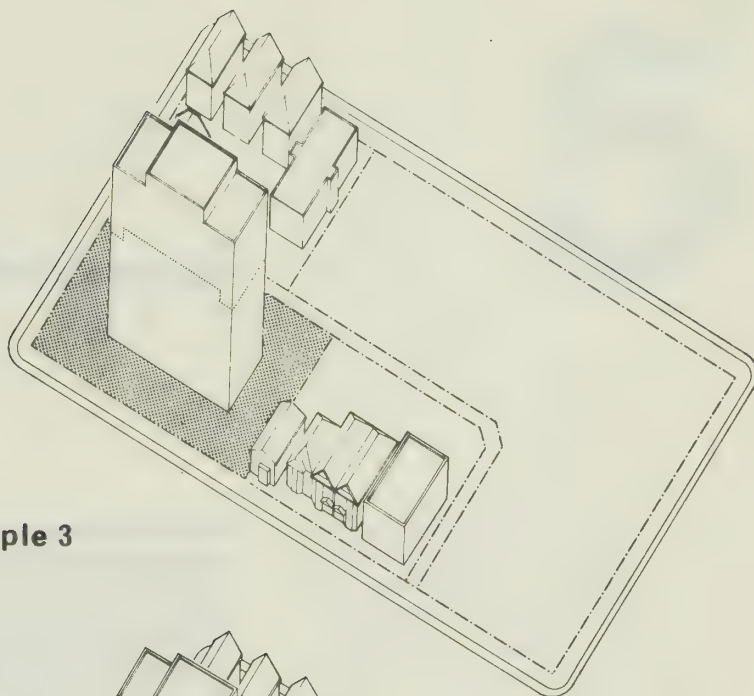
F.A.R. on larger sites, it is assumed that a development company has also acquired the four above houses to add to its properties at 128 to 142 Robinson. This yields a total site of 40,943 square feet, or slightly over the maximum area required to yield a F.A.R. of 2.55 without landscape bonus. Potential development would be as follows:

site area:	
136' x 301' (approx.)	40,943 sf
base F.A.R.:	2.55
base gross floor area:	104,405 sf

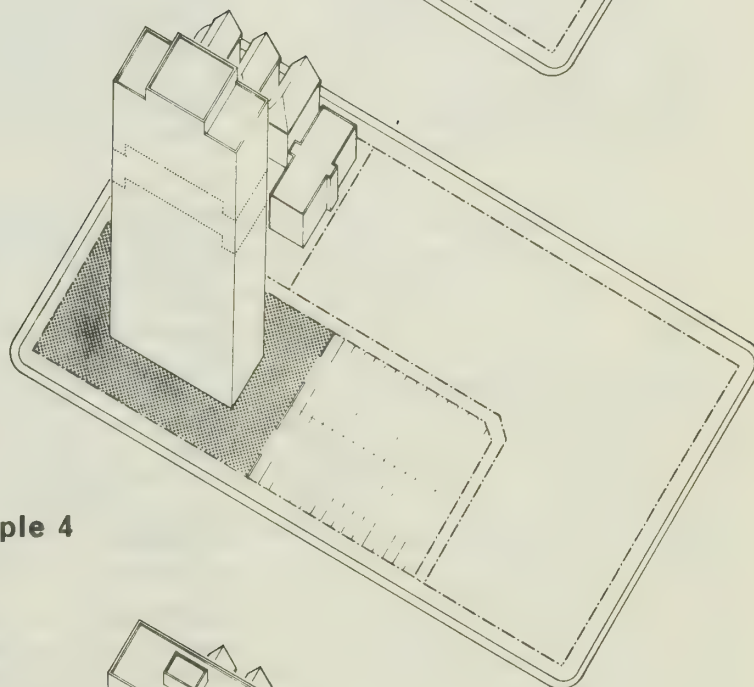
Since this added land has increased the F.A.R., the gross floor area is greater than if the two sites were developed separately.

additional base gross floor area	46,438 sf
additional land area	13,600 sf
base F.A.R. for added land	3.4

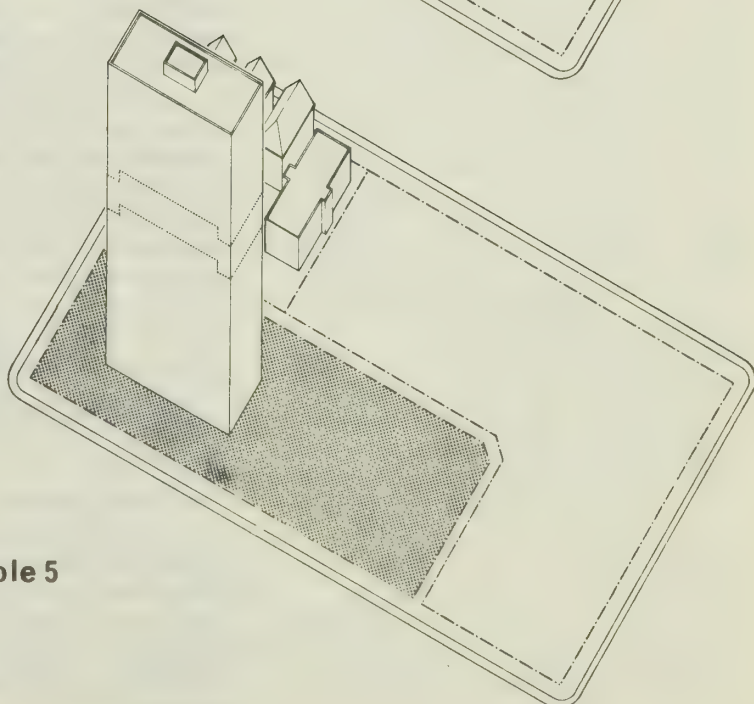
In other words, since the additional land increases the F.A.R. of the land already possessed, its value to the developer is far in excess of the general market price. In fact the acquired properties are about fifty per cent more valuable per square foot than the original site, in terms of gross floor area generated.



Example 3



Example 4



Example 5

Example 5

If it can be assumed that all of these latter properties were landscaped, then 75 per cent of that area would be considered excess, and thus add a bonus to the 50' x 135' apartment building on the corner. This additional landscaped area would be thus 10,200 square feet. From this we can determine:

additional landscape	
bonus floor area:	20,400 sf
additional base gross	
floor area:	43,438 sf
total additional gross	
floor area:	63,838 sf
total F.A.R. for	
additional land:	4.9

This calculation shows that the acquisition of these additional properties represents a considerable benefit to the developer. He gains additional floor space for the size of his lot and can also claim a bonus for landscaped open space. The additional properties then become 130 per cent (4.9 compared to 2.12) more valuable than the properties in the original assembly because the developer can build 130 per cent more new floor space on the land.

This additional gross floor area will add an extra **eleven floors**, or about 110 feet at 5,870 square feet each, to the proposed 16 storey building. The result is an apartment slab of 27 floors of about 270 feet in height.

Had the larger site been developed at the original F.A.R. of 2.12 without landscape or site area bonuses, it would have produced a gross floor area of only 86,800 sf, which adds up to a building of less than fifteen floors.

In other words twelve of the floors of this possible 27 storey tower would be derived from the various bonuses available to the developer.

The consequences of the bonus policy

Cities usually institute a density bonus to encourage developers to provide amenities for the public.

For Hamilton two questions must now be asked. Does the bonus system as it now stands really provide amenities for the public? If so, are these amenities achieved at a reasonable cost to the city?

We believe that nothing, except for a possible increase in tax assessment, is provided by the developer to support the extra apartment suites he gains through the bonus system. The open space does not help to relieve the additional traffic created by the building. Indeed, the increased number of apartment suites can only increase the traffic load on the surrounding streets. Nor does the contribution of open space help to bear the cost of enlarged sewers or improve other facilities borne by the taxpayer.

There are even some questions as to whether bigger buildings do, in practice, provide greater assessment revenue. It is not within the mandate of this report to examine tax returns from development but reference can be made to the study of development opportunities in the Toronto Borough of York that was conducted by Price-Waterhouse, a firm of chartered accountants; the study of re-assessment in Mississauga conducted by the Bureau of Municipal Research; and a book, **The Ultimate High Rise**. All three studies raise grave doubts as to whether municipalities really do benefit financially from high rise development.

The benefits accruing to the city from the density bonus must be measured against such factors as wind tunnels created by high rise buildings, the overshadowing of surrounding streets and the functional usefulness of open spaces created by set-backs and the bonus system.

For these reasons we believe it is no longer possible to accept uncritically the benefits of the bonus system.

Indeed, we have come to believe that useful open space simply cannot be created by squeezing an apartment house into one small area of a building lot.

It would therefore seem appropriate for planners and legislators to weigh the benefits of high rise construction against the benefits of lower, more continuous development which, we believe, preserves the city street as a public place, and offers greater **useful** contact with outdoor space than tall pavilion structures do.

The most important effect of the bonus system is to increase the density of building, in this case from 2.12 to 3.32, that is a probable increase of over fifty per cent in the **number of people** who will eventually live on this land. Since a large part of the lot must be left empty to achieve this density, the bonus system results in pushing the high rise still higher into the sky.

Redevelopment zoning and the bonus system have together a startling effect on real estate values. The land quickly becomes much more valuable than the houses that sit on it. The only people who can afford to buy them are developers and speculators waiting to sell to developers. Families are driven out. The area becomes run down and depressed. A slum can be created by the city's zoning laws.

The City of Hamilton has enacted special parking requirements for multiple dwellings which relate the number of parking units required to the number of units built. The usual formula requires 125 parking spaces for every 100 units, or 125% parking. However, since some inner city areas are well served by the

public transit network, this requirement has been (appropriately) relaxed. The area immediately surrounding City Hall, a district of about 12 blocks square, has only an 80% parking requirement; the 3 block deep zone immediately surrounding this inner ring requires 100% parking. These zones are shown in the accompanying Durand area map.

[illegible]

6

Program

Middleground

The previous sections of this report described the general conditions of development in Hamilton and in the Durand Neighbourhood.

The next section catalogues a conventional program of accommodation and then shows how general development conditions apply to the Bay/Charlton block and the Caroline/Duke block. These conditions will be described under the conditions of Existing Housing, Property Values, and a summary of Variables.

Since the purpose of this study is to explore the alternatives to present development patterns and their cost implications, it is important that all other variables remain constant, so that the results of each alternative can be compared.

Thus each alternative for each study block varies only in respect to the configuration of the building, and in the case of alternative 4, only the total gross floor area.

In each block the proportion of apartment types remains constant. The number of bachelor, one-bedroom, two-bedroom and three-bedroom units is identical in alternatives having the same floor area, even though low rise schemes might in practice be more appropriately divided into fewer and larger "family" units with access to personal outdoor space, and further, by nature of the tenants of such accommodation, reduce the population of the block.

To employ a realistic program for each study block, figures were obtained from a publication of the Hamilton-Wentworth Planning Area Board, **Multiple Residential Development in the County of Wentworth and the City of Hamilton 1960-1970**, dated June, 1972.

In that study data sheets were prepared for each apartment development in the designated area, and were arranged in sections that relate to zoning districts. Summaries for E and E3 Districts give the overall ratio of apartment units for each zone and the average unit size. These unit sizes are given in the accompanying tables, and have been used for this study.

It was evident from the Hamilton-Wentworth data that a difference exists between overall ratios of units in E zones and in E3 zones. This may be due to several factors: E buildings are lower and therefore more suitable for family accommodation; E3 buildings, because of their proximity to the core, may be more attractive, and thus cater to 'bachelor' tenants. In any event, this difference was recognized, and these ratios are reflected in the programs for each block.

CAROLINE/DUKE BLOCK

Program of Units

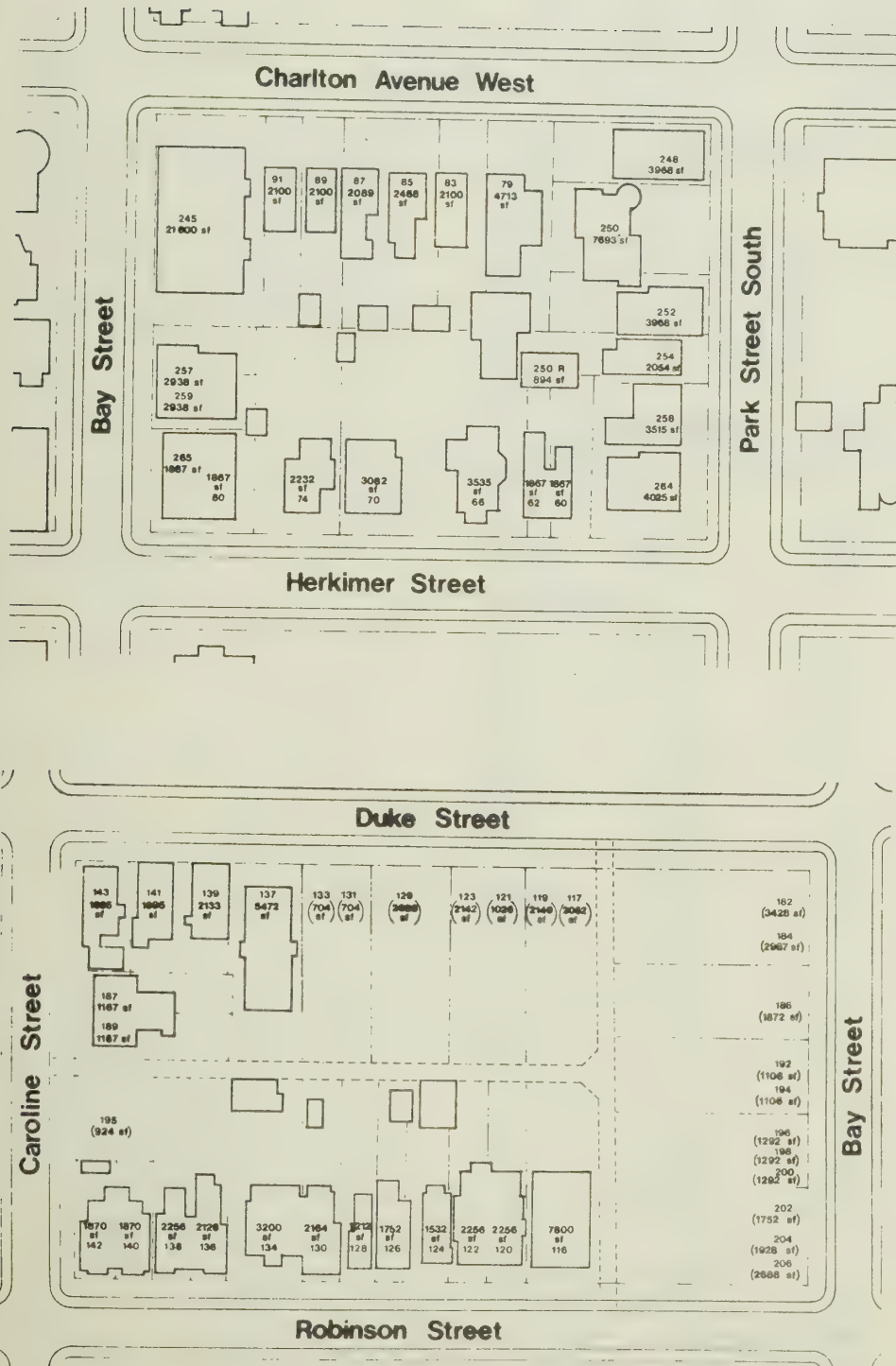
Unit Type	Typical E3 Distribution	Unit Gross Floor Area
Bach	31%	550 g.s.f. (171)
1 Br.	42%	750 g.s.f. (315)
2 Br.	25%	950 g.s.f. (238)
3 Br.	2%	1150 g.s.f. (23)
Resultant Average size in g.s.f.		747
Actual average size in g.s.f. for existing E3 apartments		711

BAY/CHARLTON BLOCK

Program of Units

Unit Type	Typical E Distribution	Unit Gross Floor Area
Bach	5%	550 g.s.f. (28)
1 Br.	49%	750 g.s.f. (368)
2 Br.	40%	950 g.s.f. (380)
3 Br.	6%	1150 g.s.f. (69)
Resultant average size in g.s.f.		845
Actual average size in g.s.f. for existing E zone apartments		868

Existing Housing



The existing brick houses on both study blocks are, in general, in excellent condition. The houses on the Caroline/Duke Block in poor repair have since been demolished. The remaining houses require only good maintenance and minimal alterations to render them in first rate condition. Two of the buildings on each block are walk-up apartments of varying ages. However, where schemes call for the retention of existing structures, cost allowances have been made for thorough renovation that would bring them up to a standard at least equal to that of new construction.

Some of these houses continue to be used as single family dwellings, duplexes or triplexes. For the purpose of this study, however, it has been assumed that **all** houses will be renovated to provide self-contained apartments (kitchen, bathrooms, finishes etc.) Experience in many cities has shown an excellent market for accommodation located in older houses in well established neighbourhoods. Georgetown in Washington, D.C., Society Hall in Philadelphia, Beacon Hill in Boston and Yorkville in Toronto are all neighbourhoods where the houses have been renovated and converted to flats. The principle of applying the same program of accommodation has been used for the old as well as for new construction. The percentage of each unit type remains constant, while the total number of units varies only as a result of density.

While recognizing the importance of accommodating low income residents in inner city areas, it should be noted that this question is beyond the scope of this report. It should also be noted that the increase in rentals required to maintain an investment on such a development, equal to that of high rise, is at most a ten per cent increase.

BAY/CHARLTON BLOCK**Accommodation in Existing Housing:**

Program:	Bach:	5%	550 g.s.f.
(E)	1 Br:	49%	750 g.s.f.
	2 Br:	40%	950 g.s.f.
	3 Br:	6%	1150 g.s.f.
	Average:		845 g.s.f.

Area of existing buildings: 63,000 g.s.f.

Total no. of units: 75

Unit distribution:

Bach: 4 @ 550 = 2,200 g.s.f.

1 Br: 37 @ 750 = 27,750 g.s.f.

2 Br: 30 @ 950 = 28,500 g.s.f.

3 Br: 4 @ 1150 = 4,600 g.s.f.

Total: 75 units of 63,000 g.s.f.

BAY/CHARLTON BLOCK**Existing Housing**

House Number	Gross Area	No. of Floors	Units Bach	Accommodated		
				1 Br.	2 Br.	3 Br.
Charlton Avenue West						
91	2100	2			2	
89	2100	2		3		
87	2089	2			2	
85	2486	2		3		
83	2100	2		3		
79	4713	2				4
Park Street South						
248	3968	2		4	1	
250	7693	2½	4		6	
252	3968	2		4	1	
254	2054	2			2	
258	3515	2½		5		
264	4025	2½			4	
Herkimer Street						
60	1867	2½			2	
62	1867	2½			2	
66	3535	2½			4	
70	3082	2		4		
74	2232	2		3		
80	1867	2			2	
Bay Street						
265	1867	2			2	
259	2938	2		4		
257	2938	2		4		
Total Accommodation						
	63,000		4	37	30	4
	Gross Area		Bach.	1 Br.	2 Br.	3 Br.

CAROLINE/DUKE BLOCK

Accommodation in existing housing:

Program:	Bach:	31%	550 g.s.f.
(E3)	1 Br.	42%	750 g.s.f.
	2 Br.	25%	950 g.s.f.
	3 Br.	2%	1150 g.s.f.

Average: 747 g.s.f.

Area of existing buildings: 44,000 g.s.f.

Total no. of units: 59

Unit distribution:

Bach: 18 @ 550 = 9,900 g.s.f.

1 Br: 25 @ 750 = 18,750 g.s.f.

2 Br: 15 @ 950 = 14,250 g.s.f.

3 Br: 1 @ 1150 = 1,150 g.s.f.

Total: 59 units of 44,000 g.s.f.

DUKE/CAROLINE BLOCK

CAROLINE/DUKE BLOCK

House Number	Gross Area	No. of Floors	Units Bach	Accommodated		
				1 Br.	2 Br.	3 Br.
Robinson Street						
116	*7800	3	1	11		
120	2256	2½	1		2	
122	2256	2½	1		2	
124	1532	2		2		
126	1752	2		2		
128	1212	2				1
130	2164	2½		1	1	
134	3200	2½		4		
136	2128	2	4			
138	2256	2½	3	1		
140	1870	2			2	
142	1870	2			2	
Caroline Street						
189	1107	1½	2			
187	1167	1½	2			
Duke Street						
143	1895	2½			2	
141	1895	2½			2	
139	2133	2½			2	
137	*5472	2	4	4		
Total Accommodation						
	44,000	59	18	25	15	1
	Gross Area	Units	Bach.	1 Br.	2 Br.	3 Br.

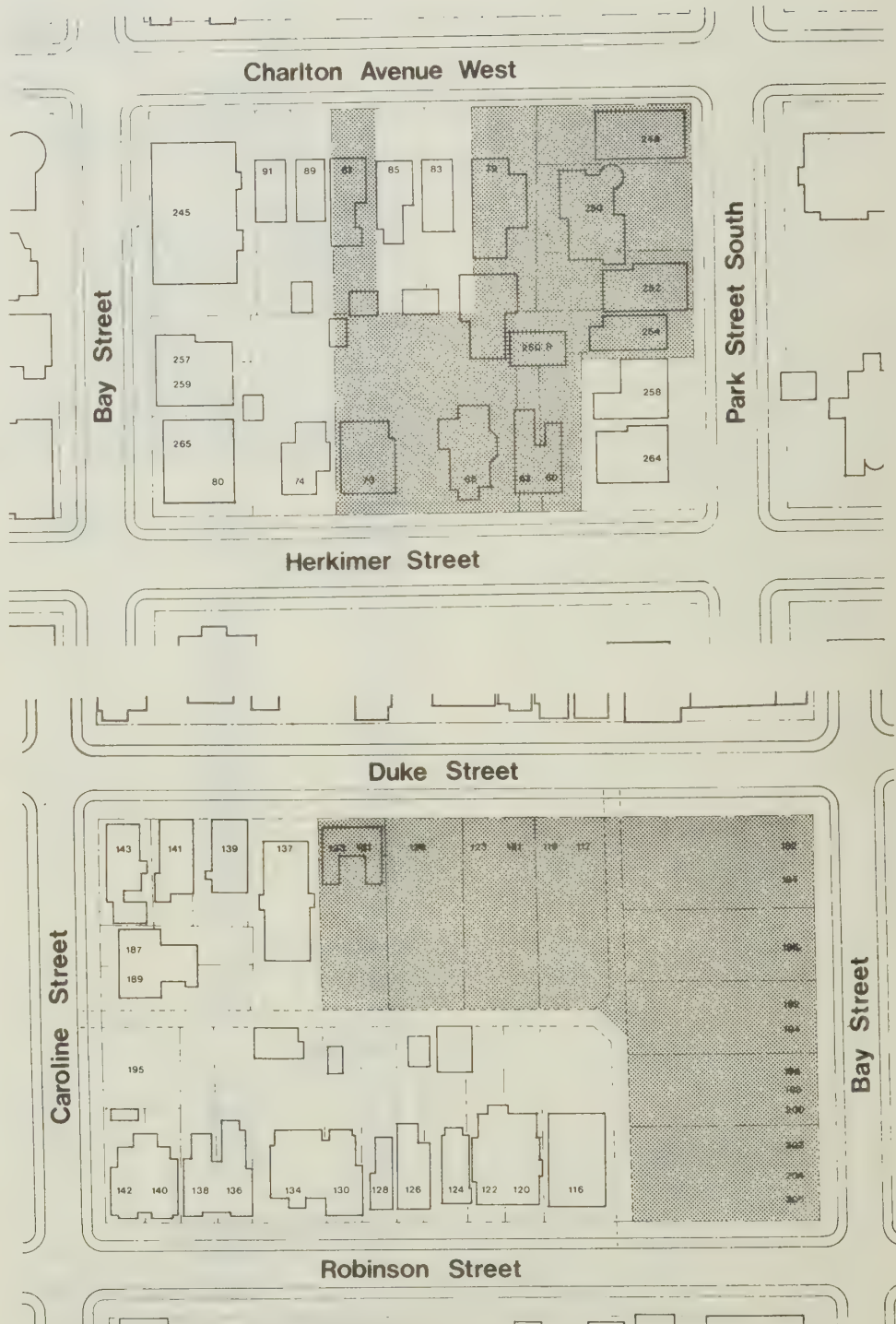
*Existing Apartment Building

8

Property Values

Development alternatives cannot be measured without a realistic appraisal of land values. This factor was therefore studied with some care. On each study block it was possible to calculate land values from recent acquisitions by developers. The costs of properties assembled by the Sun Life Assurance Co. on the Duke/Caroline Block, and the properties owned by Ronark Development on the Bay/Charlton Block, were obtained from public records of the sale transactions. The prices paid for the two properties differ significantly. Their differences can be attributed to the different zoning designations, which offer different density potentials, the E3 zone offering a greater potential than the E district does.

It should be noted that the same piece of land will have differing values depending on whether the buildings on it when purchased are subsequently demolished or not. If the buildings are demolished, then the purchase price must be assigned in total to the land. If the buildings are kept, then the value of the structures used in any new development must be subtracted from the purchase price in order to determine the land price. In this study it has been assumed that the existing structures are valuable only as shells, to receive total renovation, and thus have been assigned a value of \$7.00 per square foot.



Bay/Charlton Block

Property Value

Based on Ronark Developments purchase

Instrument No.: 299642 AB (1973)

Properties: 79 and 87 Charlton Ave. W.
248 to 254 Park St. S.
60 to 70 Herkimer Street

Area: 53,890 s.f. (approximate)

Cost: \$355,000 (about \$6.60/s.f.)

Area of block: 109,250 s.f.

Less area of 245

Bay Street S.: 10,880 s.f.

Remaining site

area: 98,370 s.f.

Projected property

cost \$649,240

Caroline/Duke Block

Property Value

Based on Sun Life Assurance Co. purchase

Instrument No.: 265840 AB (1973)

Properties: 117 to 133 Duke Street
182 to 206 Bay Street S.

Area: 64,600 s.f. (approximate)

Cost: \$875,000 (about \$13.55/s.f.)

Area of block (less lane): 134,000 s.f.

Projected property costs: \$1,817,055

9

Summary of Variables

The preceding sections have attempted to describe the existing conditions of the area and the criteria for this study; each element has been analysed in terms of its impact upon the study blocks. Some of these factors have been recognized as constants. For example, the square foot cost of renovation is the same for all schemes on both study blocks. On the other hand, many of these elements vary — the land cost for the Bay/Charlton Block is almost half that for the Caroline/Duke Block.

But the purpose of this study is to simulate existing conditions, and, therefore, these differences have not been ignored.

Where special conditions occur on a study block they have been incorporated in the calculations. However, while the differences between each block are recognized, the alternative schemes, one through four, vary only according to the height, the density, and the extent to

which existing structures have been retained. Thus comparisons between the data and results for the alternative schemes on a particular block are possible but comparison between schemes on different blocks are not. Those elements which vary are outlined below.

Variables	Bay/Charlton	Caroline/Duke
Site Area	98,370 sf (excludes 145 Bay St. S.)	134,000 sf (excludes existing lane)
Parking Required	100% of units	80% of units
Density (F.A.R.)	1.70 (constant)	2.25 (site average)
Bonus Systems	No Bonus	landscape bonus and site bonus
Property Value	\$6.60/sf (approximate)	\$13.55/sf (approximate)
Program of Units	845 sf average unit area	747 sf average unit area
Existing Housing	63,000 sf gross area	44,000 sf gross area

Foreground

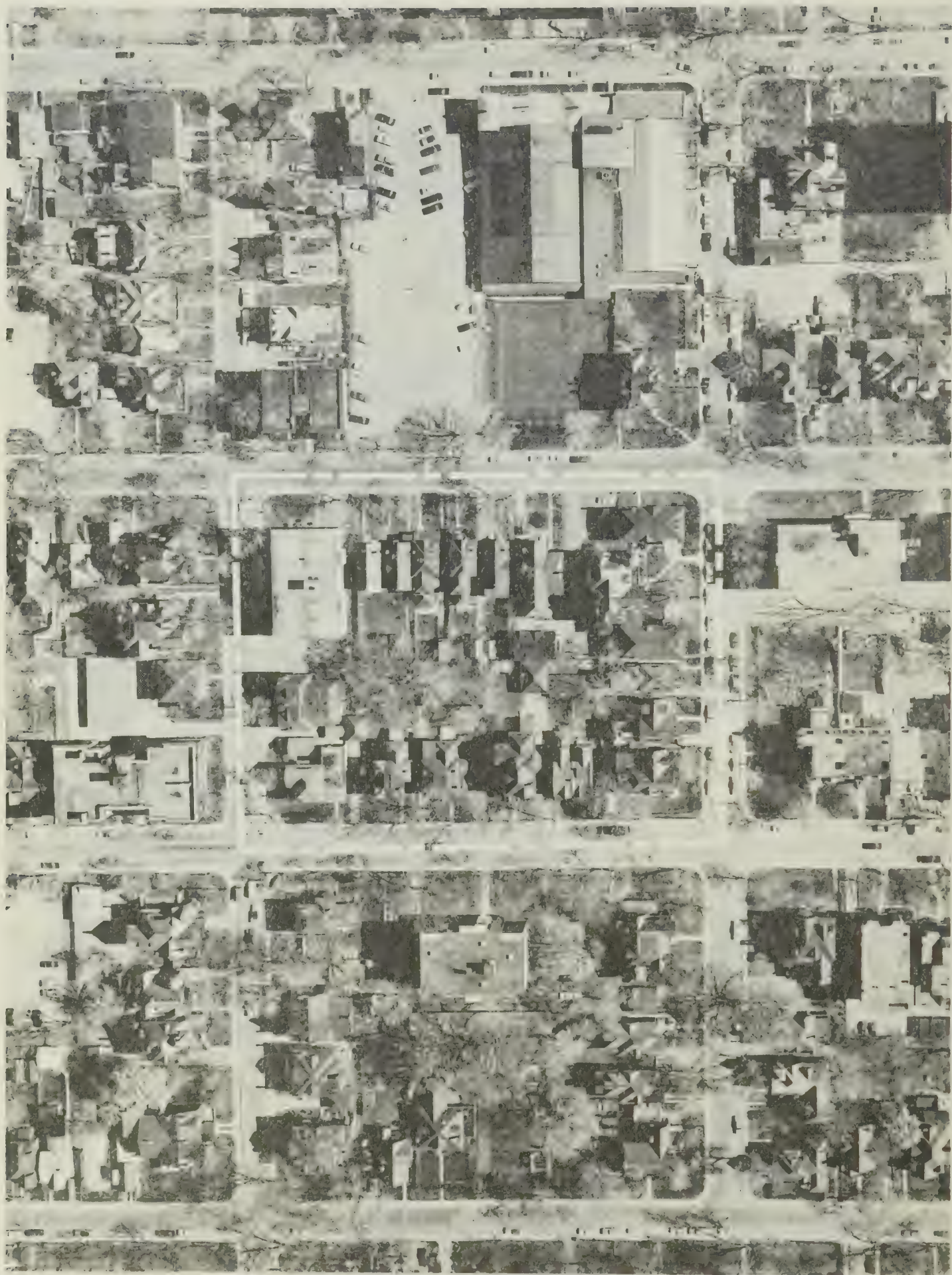
The preceding sections of this study form the foundation for the subsequent comparisons of the four alternative schemes for each block.

Construction costs are, of course, crucial to this report and a section of this report has been provided for detailed construction data. Construction costs used are those for the current year. More important than the accuracy of these figures is the fact that the costs used have been applied to all schemes, and thus accurate comparisons can be made.

The contention that the developer would gain the same return on investment for each of our alternatives, given the rent structure posed, is a true picture of what would happen if he chose any one of the schedules.

The following section describes each of the four alternatives for the Bay/Charlton study block and four alternatives for the Caroline/Duke study block. The Caroline/Duke block is, of course, in an E3 district and the picture is complicated by the bonus system. The alternatives have therefore been divided into A and B sections to show how they work with and without the bonus system.

At the end of each set of descriptions a summary of conclusions drawn from the four alternatives is provided.



10

Development Alternatives

BAY/CHARLTON STUDY BLOCK

In the E district the large, solid, brick homes are being replaced by apartment blocks that vary in size from five to ten storeys.

On the Corner of Bay and Charlton stands a five-storey apartment building that was probably built in the early 1950's. This building has not been included in the calculations because it is a relatively new building and if the developer did acquire it, it has been assumed that it would be left as it is.

The large mansion at the corner of Charlton and Park is now flanked by two three-storey apartment houses. It has been assumed that a developer would replace these in order to achieve a greater density.

The houses have been fairly widely spaced because there is no laneway and the garages must be reached by drive-ways leading in from the street. Unfortunately, the houses are not far enough apart to allow for infilling, nor is the block deep enough to comfortably allow the construction of mews housing.

Alternative 1

All the remaining buildings on the site except for the Bay/Charlton apartments are acquired by developers. All old houses are demolished.

Five slab buildings that are typical of apartment construction in Hamilton are constructed, varying in height from five to seven storeys.

Using an F.A.R. of 1.7 gross floor area of 167,230 square feet is achieved.

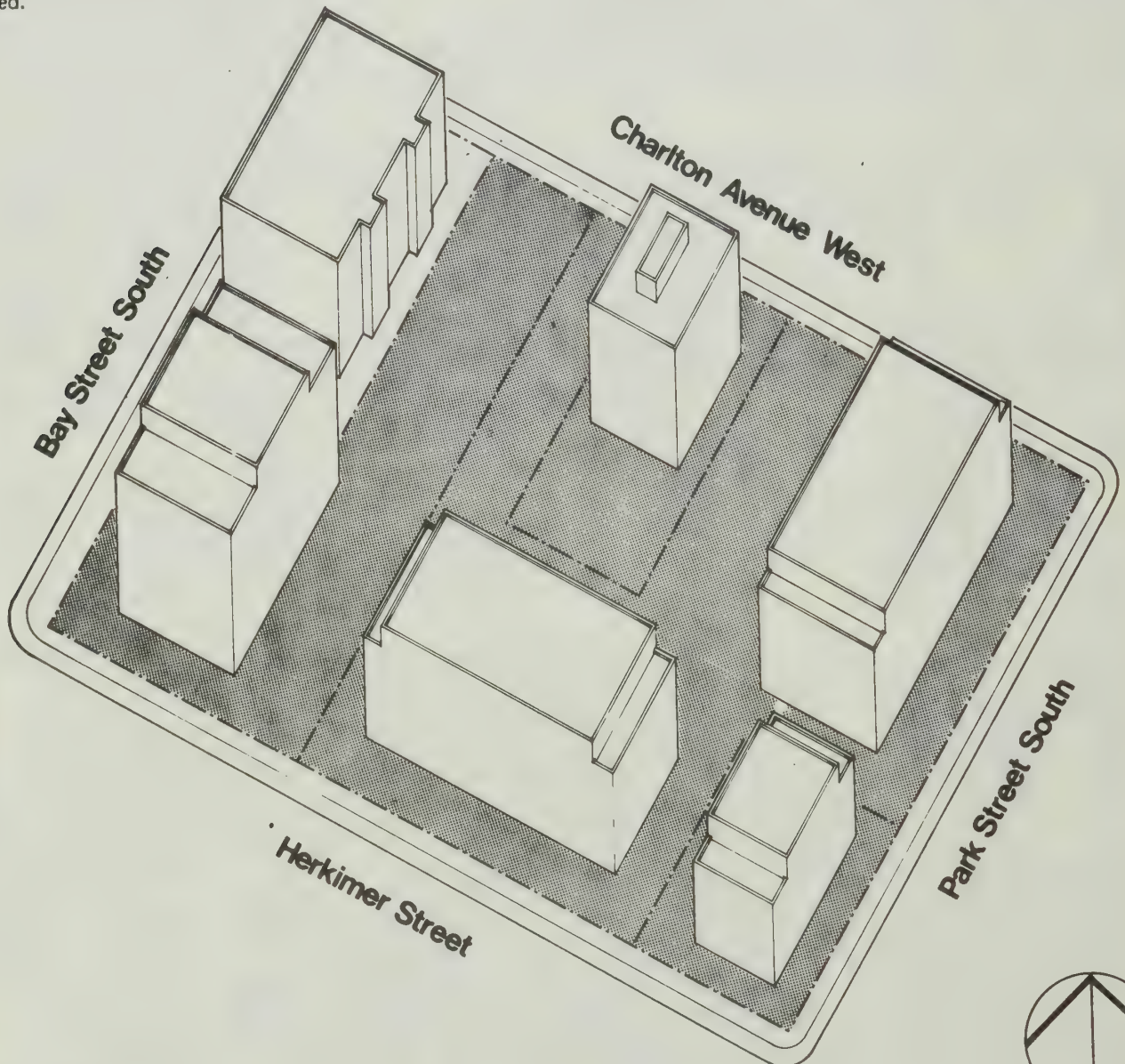
An apartment mix of five per cent bachelors at 550 square feet, 49 per cent one bedroom at 750 square feet, 40 per cent two bedroom at 950 square feet and 6 per cent three bedroom at 1150 square feet is used.

The average cost per suite is \$23,452.00.

The rents are:

Bachelor.....	\$165.30
One-bedroom.....	\$188.10
Two-bedroom.....	\$228.00
Three-bedroom.....	\$273.60
Parking.....	\$ 13.70

The streetscape completely disappears. (Streetscape is here defined as streets which have fairly continuous building facades along their length and in reasonably close proximity to the sidewalk, as opposed to tall, isolated structures unrelated to the street line.)



Scheme 1

Alternative 2

The developer acquires all the properties except the Bay/Charlton apartments.

All existing houses are demolished.

The city waives set-back requirements and instead of building slabs set back from the street, new low rise buildings that follow the perimeter of the block are constructed.

Within the envelope chosen a wide variety of building styles is possible.

Pages 27–30 show a few of the variety of building forms that can be achieved with low-rise construction.

The finished buildings are about four storeys high, but the gross floor space remains 167,230 square feet.

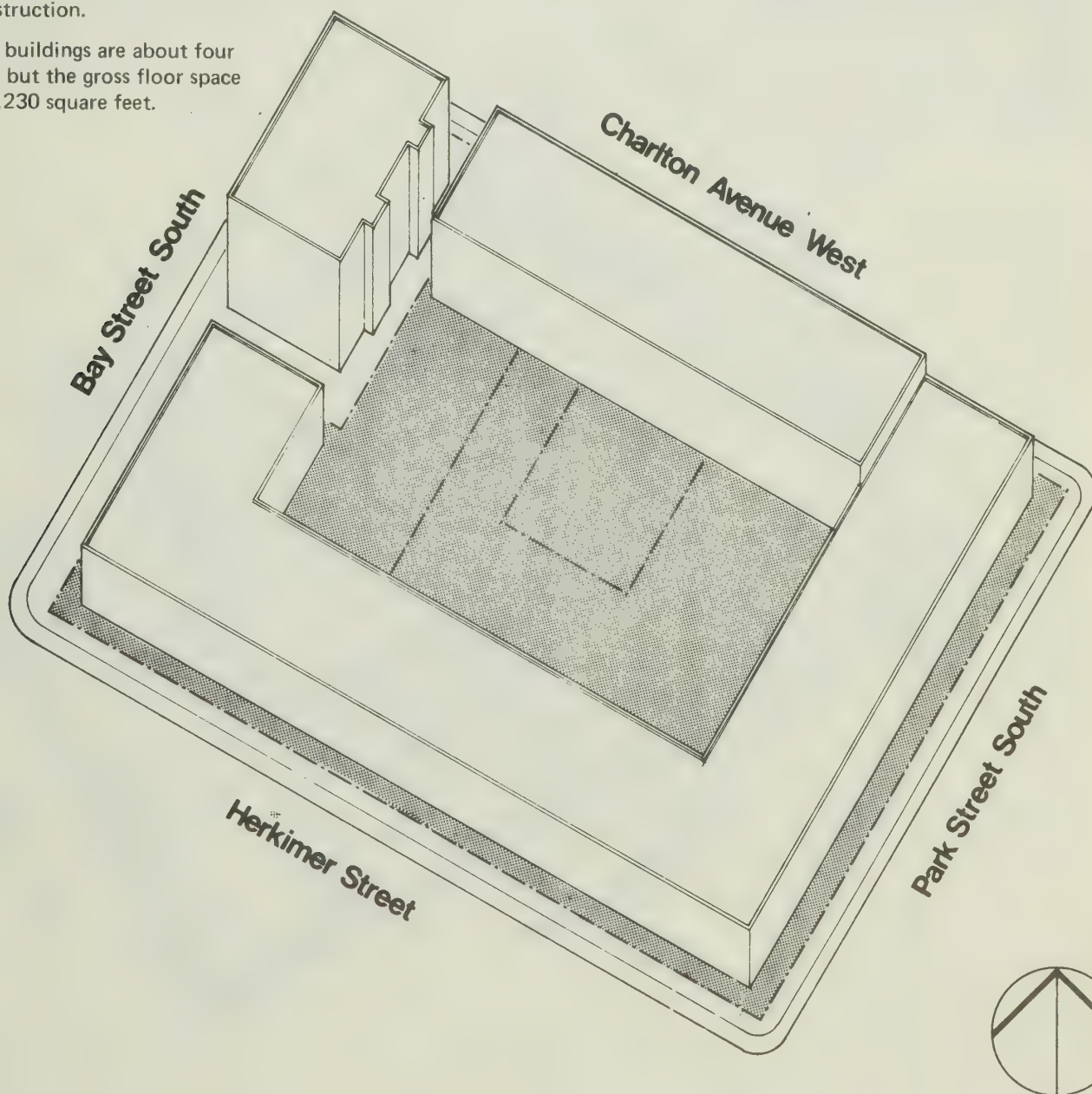
The apartments are exactly the same size as they would have been in the slab buildings and the mix, five per cent bachelor, 49 per cent one-bedroom, 40 per cent two-bedroom and six per cent three bedroom also remains the same.

The average cost per suite is \$24,356.00.

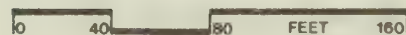
The rents are:

Bachelor	\$169.50
One-bedroom	\$192.90
Two-bedroom	\$233.80
Three-bedroom	\$273.60
Parking	\$ 14.05

The streetscape and human scale has been maintained.



Scheme 2



Alternative 3

The developer acquires everything except the Bay/Charlton apartments but decides to tear down only the properties on Bay Street. The houses on Charlton, Park and Herkimer Streets remain standing but all are renovated and converted to apartments.

The density unused by the houses are utilized for an infill building placed between the houses on Charlton and Herkimer Streets. The total gross floor area is still 167,230 square feet.

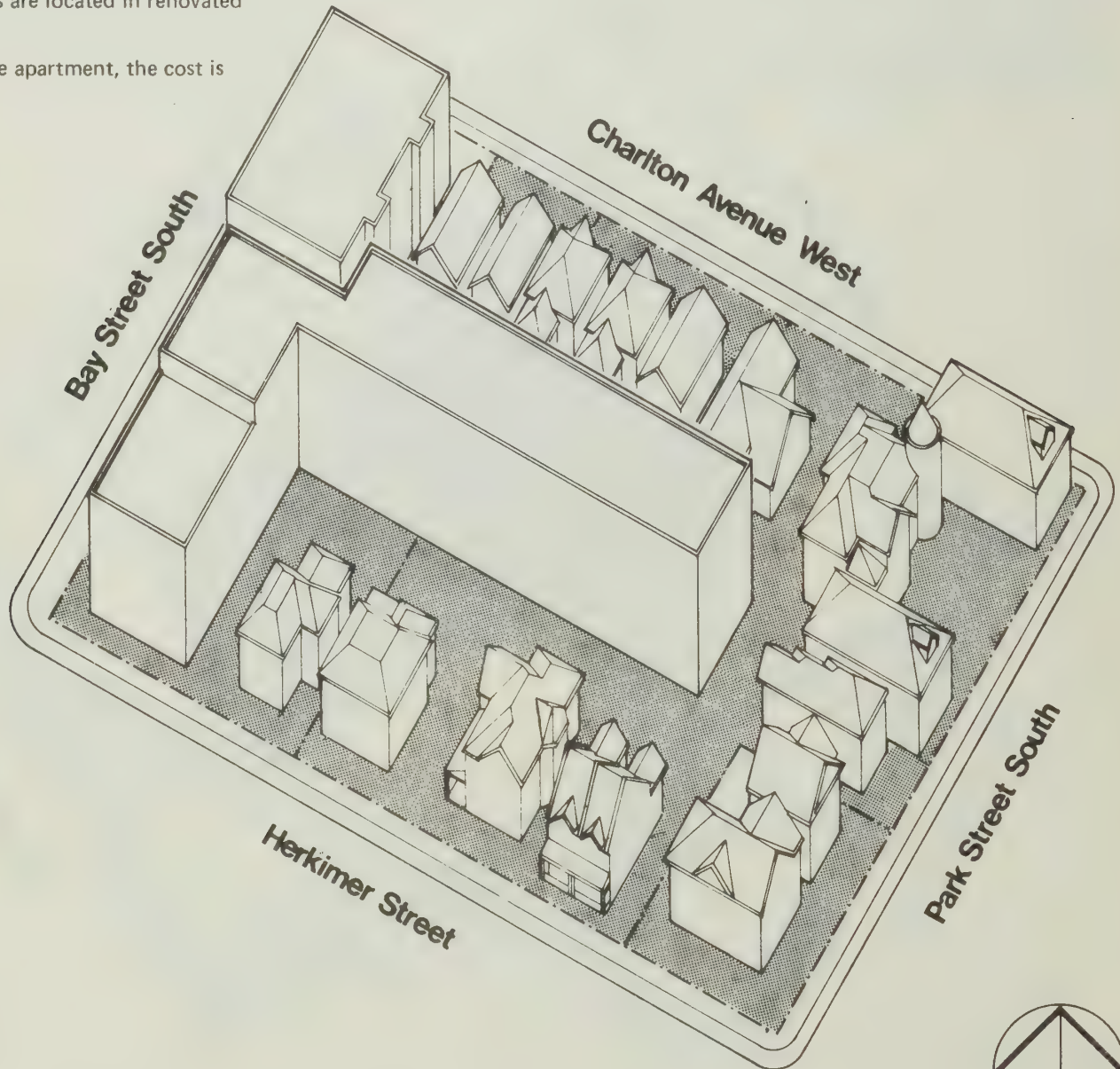
The apartment size and the apartment mix remain the same but now some of the apartments are located in renovated houses.

For the average apartment, the cost is \$23,870.00.

The rents are:

Bachelor.....	\$167.25
One-bedroom.....	\$190.30
Two-bedroom.....	\$230.70
Three-bedroom.....	\$276.80
Parking.....	\$ 13.85

Much of the existing streetscape is preserved.



Alternative 4

The developer acquires all the properties except the Bay/Charlton apartments.

No buildings are demolished, but are renovated and converted to apartments.

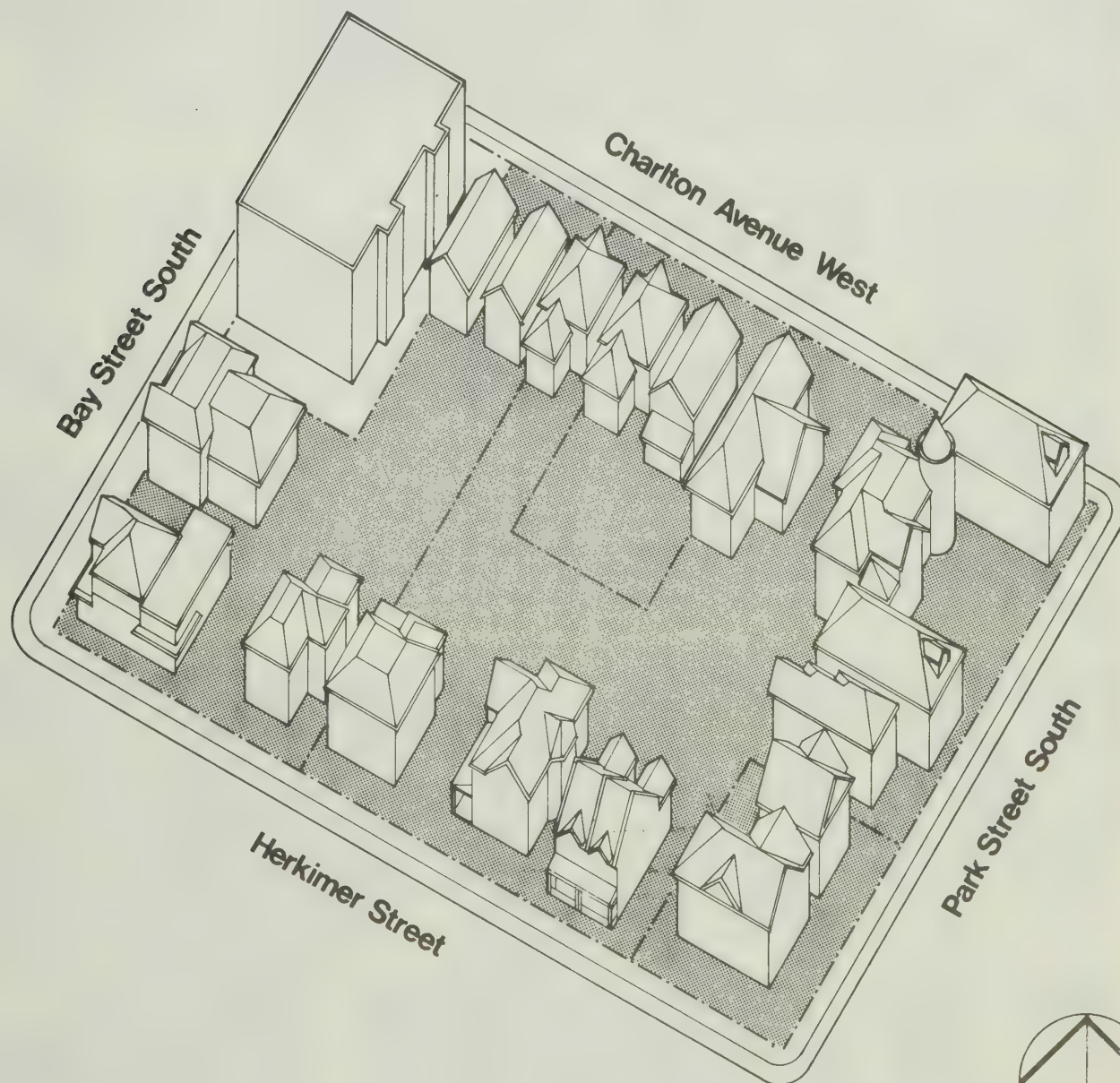
The same size of apartments and the same apartment mix are achieved as would have been achieved in new construction, but the gross floor space is reduced to 63,000 square feet, less than half the allowable area.

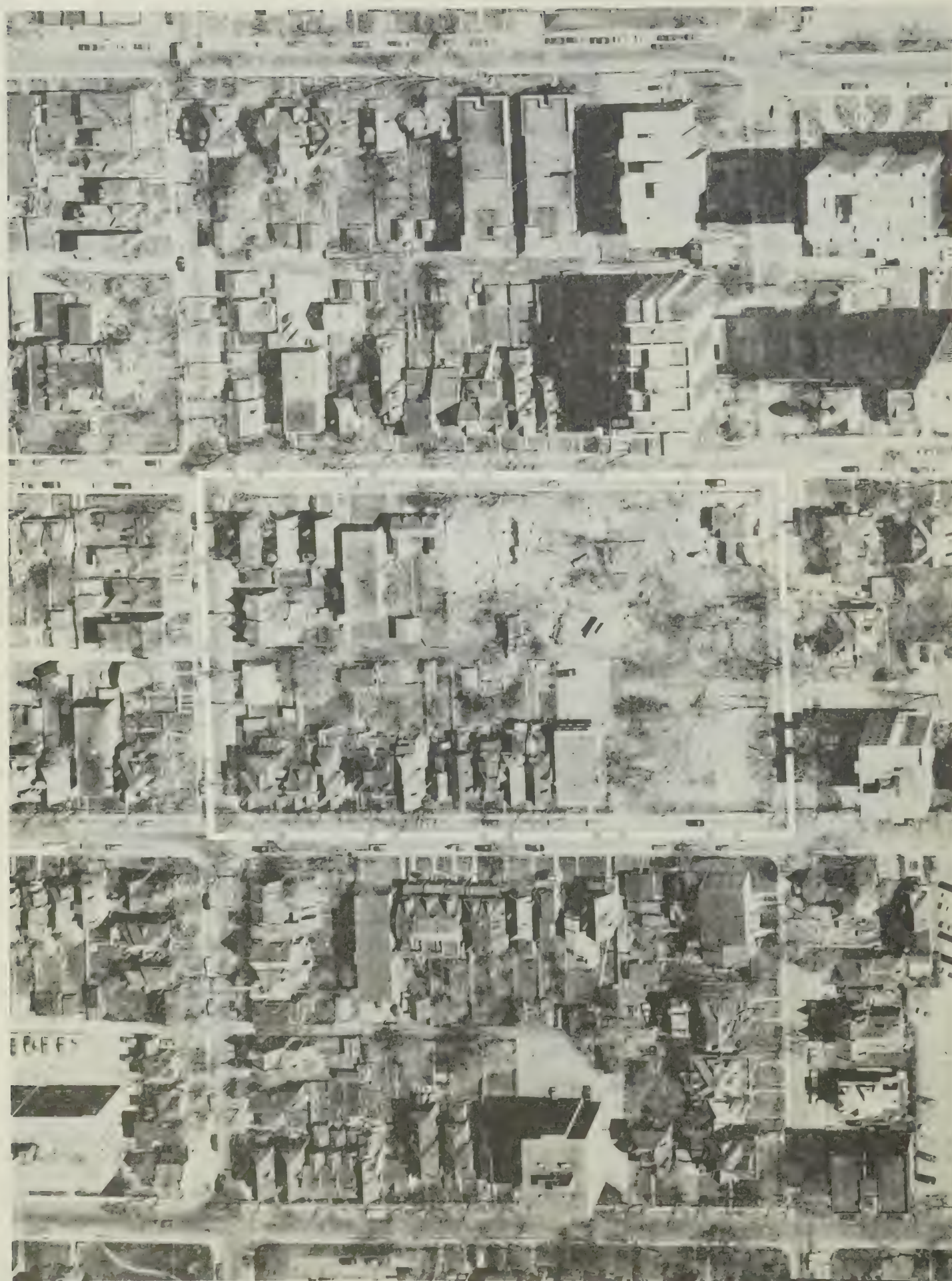
The total project cost per suite is \$26,161.00

The rents are:

Bachelor.....	\$177.90
One-bedroom	\$202.45
Two-bedroom	\$245.50
Three-bedroom	\$294.45
Parking	\$14.75

All of the existing streetscape, buildings and neighbourhood have been preserved.





CAROLINE/DUKE STUDY BLOCK

The block selected is on the southern edge of the E3 zone, and is well into the process of assembly and demolition.

The corner fronting on Caroline and Robinson Streets has been acquired, and demolition permits for seven houses have been obtained.

The eastern half of the block has also been acquired by a separate development company. The houses, in preparation for construction of a high-rise apartment building, have been demolished.

However, for the purposes of this report we have assumed that the block exists as it did when this study was commissioned. Our concern is to show what alternatives were possible for this and thereby for other blocks in the city.

All of the following alternatives provide 80 per cent parking underground.

Alternative 1A

All the buildings on the block are demolished. Using the benefits that can be gained from the bonus system, a 28-storey slab, a 16-storey slab and two 15-storey towers are constructed. The gross floor area is 465,220 square feet.

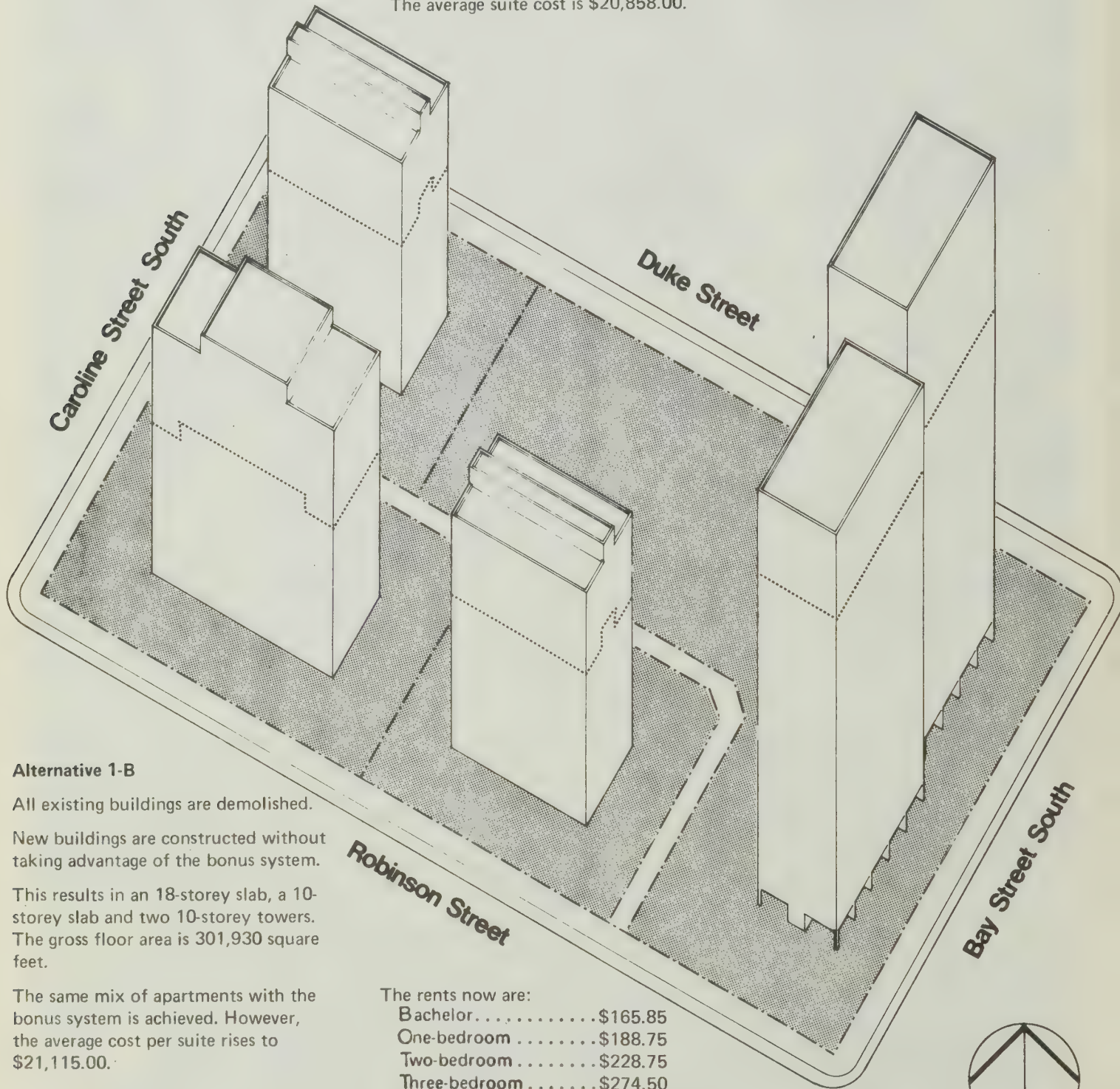
The streetscape disappears.

A mixture of 31 per cent bachelor apartments at 550 square feet; 42 per cent one-bedroom apartments at 750 square feet, 25 per cent two-bedroom apartments at 950 square feet and two per cent three-bedroom apartments at 1,150 square feet is achieved.

The average suite cost is \$20,858.00.

The rent scale is:

Bachelor	\$160.60
One-bedroom	\$181.50
Two-bedroom	\$220.00
Three-bedroom	\$264.00
Parking	\$ 13.20

**Alternative 1-B**

All existing buildings are demolished.

New buildings are constructed without taking advantage of the bonus system.

This results in an 18-storey slab, a 10-storey slab and two 10-storey towers. The gross floor area is 301,930 square feet.

The same mix of apartments with the bonus system is achieved. However, the average cost per suite rises to \$21,115.00.

The rents now are:

Bachelor	\$165.85
One-bedroom	\$188.75
Two-bedroom	\$228.75
Three-bedroom	\$274.50
Parking	\$13.70

The streetscape disappears.

Scheme 1

Alternative 2-A

All existing buildings are demolished.

New low rise buildings using the maximum amount of floor space are constructed. These face the street and extend inward for a depth of 60 feet. The gross floor area is 365,070 sq. ft.

Taking advantage of the bonus system, four buildings are constructed. The largest is just over six storeys and the lowest is just under four storeys.

Apartments of the same size and type as in high rise are built.

A new streetscape has been created.

The cost per suite is \$22,013.00.

The rents are:

Bachelor.....	\$165.35
One-bedroom	\$188.15
Two-bedroom	\$228.10
Three-bedroom	\$273.70
Parking	\$ 13.70

Alternative 2-B

All existing buildings are demolished.

The same arrangement of low rise buildings built in scheme 2-A are constructed, but advantage of the bonus system is not taken. 301,930 square feet with an F.A.R. of 2.25 is built.

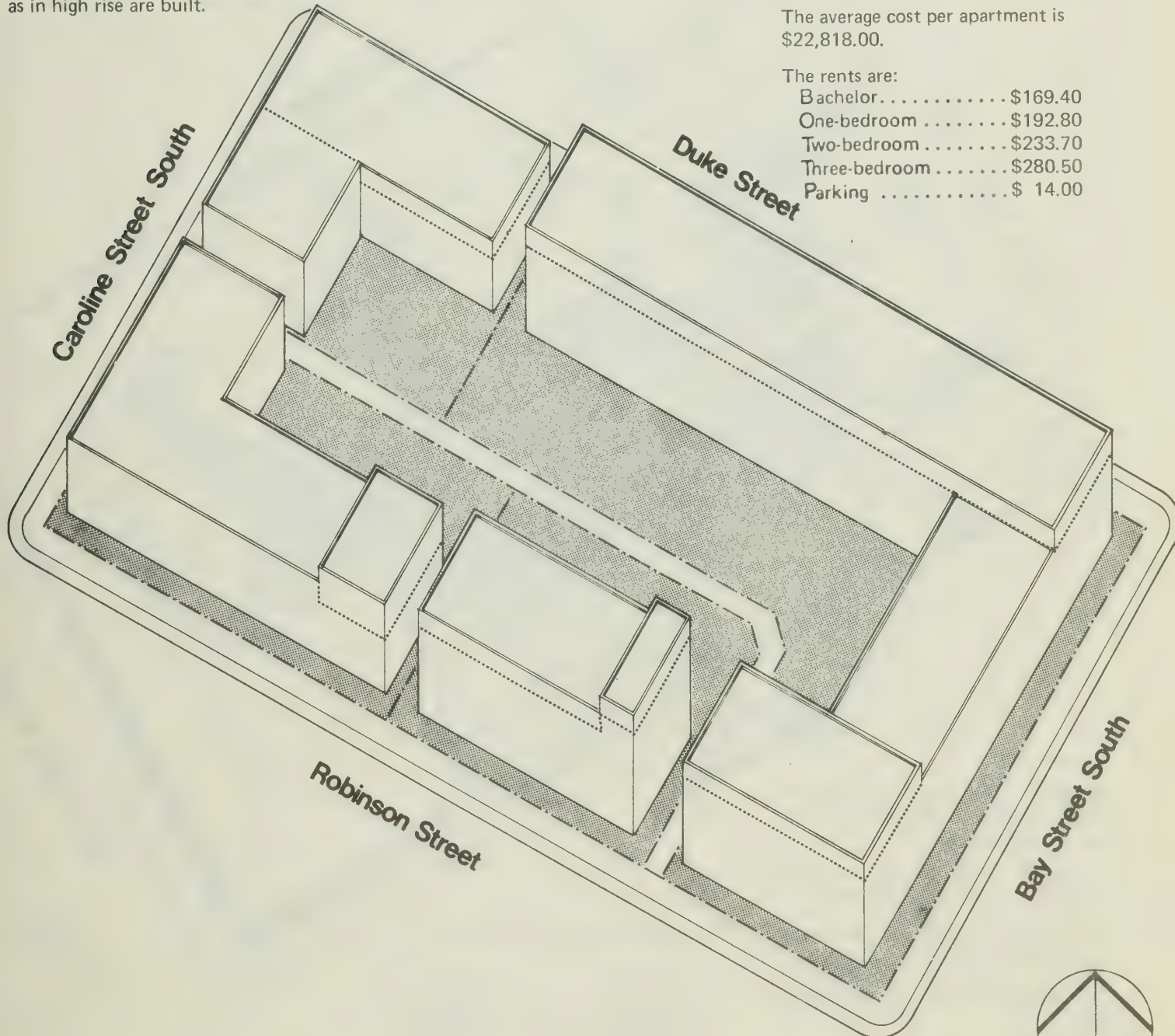
The highest building is now a little over five storeys and lowest is a little more than three storeys.

The streetscape is rebuilt closer to a human scale.

The average cost per apartment is \$22,818.00.

The rents are:

Bachelor.....	\$169.40
One-bedroom	\$192.80
Two-bedroom	\$233.70
Three-bedroom	\$280.50
Parking	\$ 14.00



Scheme 2

0 40 80 FEET 160

Alternative 3-A

Either a consortium is formed and it is decided to save all the housing that exists on the block, or one developer acquires the whole block and utilizes all the existing buildings, or density transfers are permitted and sold by householders.

By taking the block as one total site it is possible to transfer surplus density to new buildings.

A building facing the street at a height of just under 10 storeys is built.

A small building of three storeys is also constructed.

A floor area ratio of 2.25 is used, and by taking advantage of the bonus system this is increased to 2.90. This achieves a total density of 389,120 square feet with the old and the new buildings.

The older houses are renovated and turned into apartments.

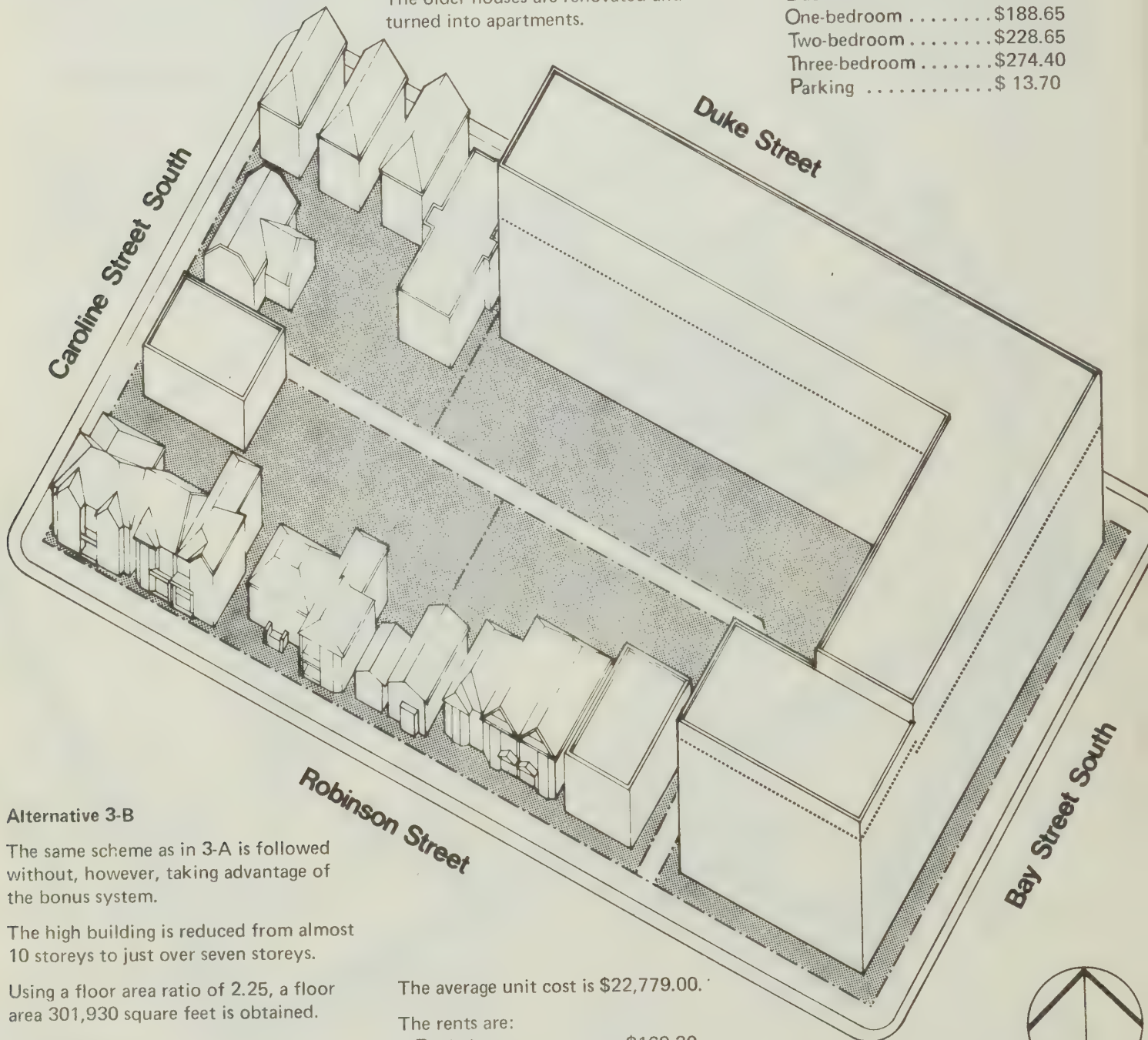
The combination of houses and new buildings contains apartments of the same size and with the same mix as would have been achieved in a totally high rise plan.

Much of the original streetscape is retained.

The average cost per suite is \$22,098.00.

The rents are:

Bachelor.....	\$165.80
One-bedroom.....	\$188.65
Two-bedroom.....	\$228.65
Three-bedroom.....	\$274.40
Parking.....	\$ 13.70

**Alternative 3-B**

The same scheme as in 3-A is followed without, however, taking advantage of the bonus system.

The high building is reduced from almost 10 storeys to just over seven storeys.

Using a floor area ratio of 2.25, a floor area 301,930 square feet is obtained.

The streetscape is closer to a human scale.

The average unit cost is \$22,779.00.

The rents are:

Bachelor.....	\$169.20
One-bedroom.....	\$192.55
Two-bedroom.....	\$233.40
Three-bedroom.....	\$280.10
Parking.....	\$ 14.00

Scheme 3

Alternative 4

All the existing houses are retained. New construction is limited to one new larger building of four storeys and one small building of three storeys.

A floor ratio of only 1.42 is used, and this yields a gross floor area of 190,400 square feet.

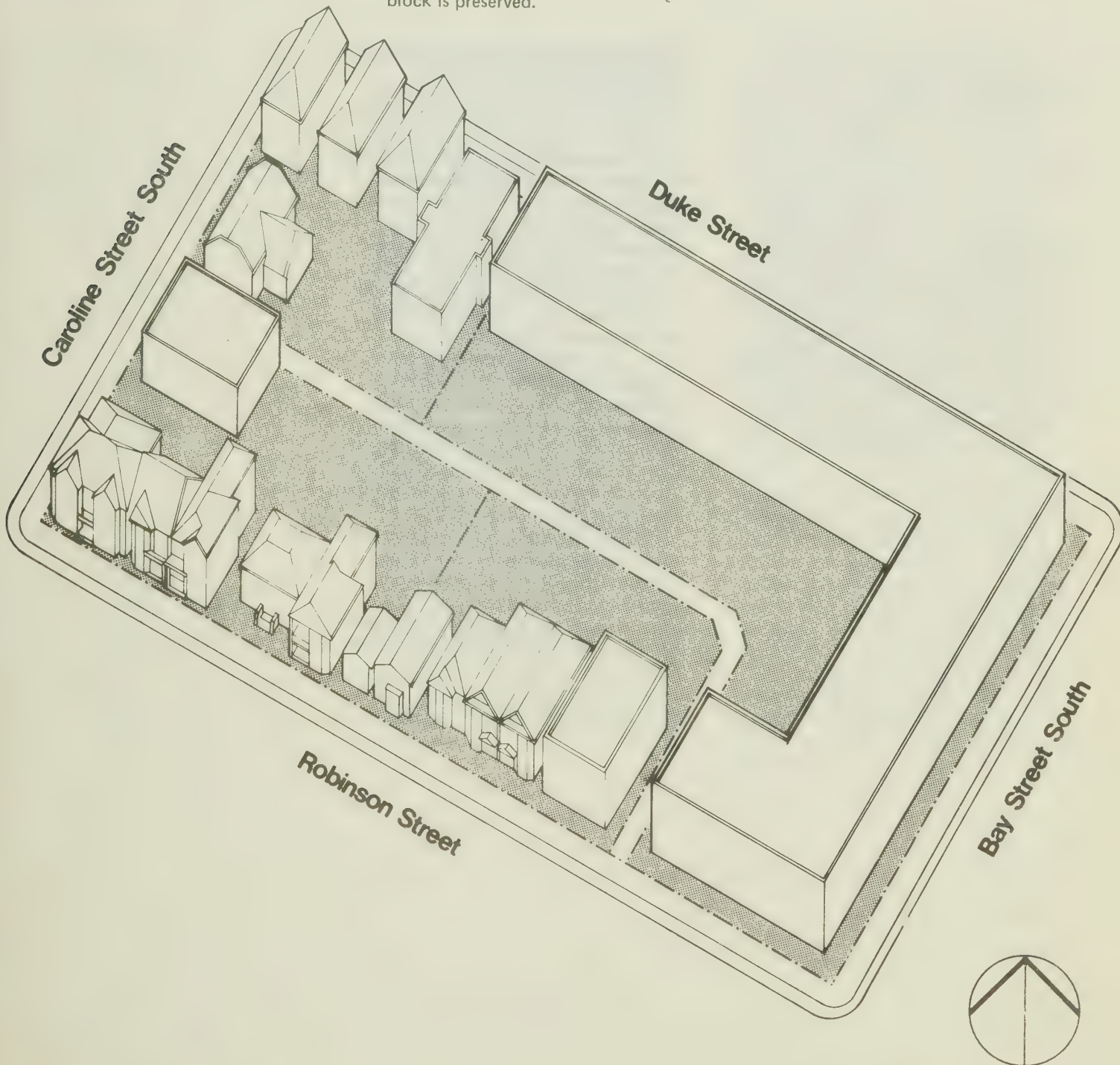
The apartments in the renovated structures are the same size and occur in the same ratio as they would have in

the high-rise buildings, and average cost per apartment is \$24,759.00 each. The rents are somewhat higher.

The rent scale is:

Bachelor	\$179.25
One-bedroom	\$203.95
Two-bedroom	\$247.20
Three-bedroom	\$296.65
Parking	\$ 14.85

The streetscape and character of the block is preserved.



CONCLUSIONS FOR THE BAY/ CHARLTON BLOCK

- (1) There is no **significant** difference between rentals for schemes one to three.
- (2) The higher rents needed for alternative 4 are due solely to the need to amortize the higher land costs. The developer has not used all the density available and he has paid prices for the property based on its full development potential. If the allowable density was lowered, the land costs would also reduce, thus rents would commensurately reduce. Alternatively higher rents (about 12%) would provide the equivalent percentage return on equity as for schemes utilizing full density potential.

CONCLUSIONS FOR THE CAROLINE/ DUKE BLOCK

- (1) Rents required for alternatives one to three are almost the same.
- (2) There is a greater difference in rents caused by not using the bonus system than by changing the configuration of buildings.
- (3) The landscape bonus does allow for lower rents but, at the same time, it increases the size of the building and cost to the public of more required public amenities and services.
- (4) The total difference between scheme 1-A, the complete high rise scheme using bonuses and scheme 3-B which would retain most of the existing housing and not rely on the bonus system for the new buildings, is only \$10 for a bachelor apartment. For a three bedroom, the difference is only \$14.00.
- (5) Scheme four, representing less than half the gross floor area of the other schemes requires higher rents in order to amortize a higher land cost. The premium required to maintain the same percentage return on equity is about 8%.

11

Construction Costs

1. Consistent current costs have been applied to all the examples shown so as to make valid comparisons between the schemes.
2. The cost of the low rise apartment scheme reflect the extra cost of building horizontally rather than vertically in a high rise scheme. These additional costs are incurred mainly by the wider distribution and collection systems and increased perimeter required in low rise construction.
3. The costs are current, based on construction starting immediately.
4. To the extent that the consultant fees are shown at the full rate and the total project cost includes a substantial project contingency, the costs shown for all the schemes may be considered conservative.
5. The variation in the cost per square foot for the underground parking reflects the fact that parking cannot be accommodated in one level in all the schemes due either to the large number of cars to be accommodated or because the configuration of the site when retaining existing houses constrains the area for underground parking. This results in parking on one and a half or two levels below ground.
6. In the examples where existing houses are retained, a value of 7.00 per square foot has been placed on the gross floor area of these houses and this amount has been deducted from the total cost of land and buildings to give the cost of the land only that is excluding the existing buildings.
7. The improvements to the houses that remain are priced to reflect that only structurally sound houses in a reasonable state of repair with respect to interior finishes, fittings and fitments are retained and further that the existing floor plans allow these houses to be divided into apartments without unduly changing the interior layout of partitions, stairwells, etc. Houses which do not meet these requirements and would cost considerably more than the average cost of 11.00 per square foot for improvements allowed in the estimates would be demolished.
8. The total project costs for schemes 1, 2, and 3, do not vary greatly when expressed as a total cost per square foot or per suite. However, the costs per square foot or per suite are higher for scheme 4 due to the fact that the sites are not developed to the maximum F.A.R. and consequently the land cost per square foot of construction of per suite is higher.

BAY/CHARLTON BLOCK**Scheme 1**

All the acquired properties are demolished and 198 new high rise apartments are constructed to achieve a maximum F.A.R. of 1.70. Average suite size is 845 square feet.

	Area in square feet	cost per square foot in dollars	Cost of Item in dollars
Land Costs:			
Land cost including all existing houses	98,370	•6.60	649,200
Construction costs:			
Demolish all existing houses	63,898	.50	31,900
New conventional high rise apartment	167,230	16.00	2,675,800
New underground parking	69,300	8.00	554,400
Total cost of land and new construction			3,911,200
Related Costs:			
Consultants fees on new construction			161,500
Insurance			10,000
Real Estate taxes on land during construction			30,000
Site services and levys — included in construction			—
Marketing fees and commissions			39,600
Legal and other fees			29,700
Landscaping walks, lighting, etc.			100,000
Interim financing			186,400
Project contingency			175,000
Total project cost			\$4,643,400
Total project cost per gross square foot of building			\$ 27.76
Cost of land and demolition.per suite			\$ 3,440.
Total project cost per suite			\$ 23,452.

BAY/CHARLTON BLOCK**Scheme 2**

All the acquired properties are demolished and 198 new low-rise apartments are constructed, with an average gross area of 845 square feet per suite. The F.A.R. is 1.70.

	Area in square feet	Cost per sq. ft. in dollars	Cost of item in dollars
Land Cost:			
Land cost including all existing houses			649,200
Construction Cost:			
Demolish all existing houses	63,880	.50	31,900
New low rise construction	167,230	17.00	2,842,900
New underground parking	69,300	8.00	554,400
Total cost of land and construction			4,078,400
Related Costs:			
Consultants fees on new construction			169,900
Insurance			10,000
Real Estate taxes on land during construction			30,000
Site service & levys including construction			—
Marketing fees and commissions			39,600
Legal and other fees			29,700
Landscaping, walks, lighting etc.			100,000
Interim financing			186,900
Project contingency			178,000
Total project cost			\$4,822,500
Total project cost per gross square foot of building			\$ 28.84
Cost of land and demolition per suite			\$ 3,440
Total project cost per suite			\$ 24,356.

BAY/CHARLTON BLOCK**Scheme 3**

All the acquired houses on Charlton, Park and Herkimer Streets, are retained and new low-rise development is built to achieve the allowed F.A.R. of 1.70. This accommodates 198 units of 845 square foot average gross area each.

Maximum allowed gross floor area 167,230 sq. ft.
 Area of remaining houses 53,394 sq. ft.
 Area of new construction 113,864 sq. ft.

	Area in square feet	Cost per sq. ft. in dollars	Cost of item in dollars
Land Costs:			
Value of remaining houses	53,390	7.00	373,600
Land cost (excluding value of remaining houses)			275,400
Construction Cost:			
Renovation of remaining houses	53,390	11.00	578,300
Demolish Bay St. houses	10,504	.50	5,300
Cost of land and work to existing houses			1,241,800
New low rise apartment construction	113,836	17.00	1,935,700
New underground parking (198 units)	74,258	10.00	742,500
Total cost of land, and new construction	167,230		3,919,500
Related Costs:			
Consultant fees			192,600
Insurance			10,000
Real Estate taxes during construction			15,000
Site service & levys — infill in construction costs			—
Marketing, fees, & commissions			39,600
Legal Fees & other			29,700
Landscaping, walks, lighting, etc.			150,000
Interim financing			189,800
Project contingency			180,000
Total project cost			\$4,726,200
Total project cost per gross square foot of building			\$ 28.26
Cost of land and demolition per suite			\$ 1,418.
Total project cost per suite			\$ 23,870.

BAY/CHARLTON BLOCK**Scheme 4**

All existing housing is retained and renovated to provide 75 new apartments of 845 square feet average gross area each. The resultant F.A.R. is 0.64.

	Area in square feet	Cost per square foot in dollars	Cost of item in dollars
Land Costs:			
Value of existing houses	63,000	7.00	208,200
Land cost (excluding existing houses)			441,000
Construction Cost:			
Renovation of existing houses	63,000	11.00	693,000
Demolition of garages	3,000	.50	1,800
Total cost of land and work to existing houses			\$1,343,700
New underground parking	26,250	8.00	210,000
Total cost of land, alterations and new construction below grade	63,000		\$1,553,700
Related Costs:			
Consultants fees			79,800
Insurance			5,000
Real Estate taxes during construction			5,000
Site services and levys — included in construction			—
Marketing fees and commissions			15,000
Landscaping, walks, lighting, etc.			150,000
Interim financing			79,300
Project contingency			63,000
Total Project Cost			\$1,962,100
Total project cost per gross square foot of building			\$ 31.14
Cost of land and demolition per suite			\$ 2,796.
Total project cost per suite			\$ 26,161

CAROLINE/DUKE BLOCK**Scheme 1.A**

All existing houses are demolished, and 623 new apartment units in high-rise buildings are constructed with an average gross area of 747 sq. ft. each. F.A.R. is thus 3.47 for the whole block.

	Area in square feet	Cost per sq. ft. in dollars	Cost of item in dollars
Land Cost:			
Land cost including all existing houses	134,100	13.55	1,817,100
Construction Cost:			
Demolish all existing houses	44,000	.50	22,000
New conventional high-rise apartment	465,220	16.00	7,443,500
New underground parking	174,440	10.00	1,744,400
Total Cost of Land plus construction			11,027,000
Related Costs:			
Consultants fees on new construction			459,400
Insurance			30,000
Real Estate Taxes during construction			90,000
Site services and levys — included in construction costs			—
Marketing fees and commissions			124,600
Legal and other fees			93,500
Landscaping, walks, lighting etc.			134,100
Interim financing			530,000
Project contingency			506,000
Total project cost			\$12,994,600.
Total project cost per gross square foot of building			27.93
Cost of land and demolition per suite			2,951.
Total project cost per suite			20,858.

CAROLINE/DUKE BLOCK**Scheme 1.B**

All existing houses are demolished and 404 new suites, in high-rise slabs are constructed, without benefit of the landscape bonus. Average apartment area is .747 sq. ft. gross each. F.A.R. is 2.25 overall

	Area in square feet	Cost per sq. ft. in dollars	Cost of item in dollars
Land Cost:			
Land cost including all existing housing	134,100	13.55	1,817,100
Construction Cost:			
Demolish all existing houses	44,000	.50	22,000
New conventional high-rise apartments	301,930	16.00	4,830,400
New underground parking	113,120	8.00	905,000
Total cost of land and new construction			7,574,500
Related Costs:			
Consultants fees on new construction			286,800
Insurance			20,000
Real Estate taxes during construction			60,000
Site Services and levys — included in construction			—
Marketing fees and commissions			80,800
Legal and other fees			60,600
Landscaping, walks, lighting etc.			134,100
Interim financing			367,700
Project contingency			350,000
Total project cost			\$8,934,500
Total project cost per gross square foot of building			\$ 29.59
Cost of land and demolition per suite			\$ 4,552.
Total Project cost per suite			\$ 22,115.

CAROLINE/DUKE BLOCK**Scheme 2.A**

All existing houses are demolished and new low-rise apartments following the perimeter of the block are constructed with a total of 489 units of 747 sq. ft. average gross area each. The landscape bonus is exploited to produce an F.A.R. of 2.72.

	Area in square feet	Cost per sq. ft. in dollars	Cost of item in dollars
Land Cost:			
Land cost including all existing houses	134,100	13.55	1,817,100
Construction Cost:			
Demolish all existing houses	44,000	.50	22,000
New low rise apartment costs	365,070	17.00	6,206,200
New underground parking	136,640	8.00	1,093,100
Total cost of land			9,138,400
Related Costs:			
Consultants fees on new construction			365,000
Insurance			20,000
Real Estate taxes during construction			70,000
Site services and levys			—
Marketing fees and commissions			96,200
Legal and other fees			72,200
Landscaping, walks, lighting etc.			134,100
Interim financing			416,800
Project contingency			430,000
Total project cost			\$10,742,700
Total project cost per gross square foot of building			\$ 29.43
Cost of land and demolition per suite			\$ 3,769.
Total project cost per suite			\$ 22,013.

CAROLINE/DUKE BLOCK**Scheme 2.B**

All existing houses are demolished. New low-rise apartment buildings containing 404 suites, averaging 747 sq. ft. each, are constructed. The landscape bonus is not utilized, thus an F.A.R. of 2.25 is used.

	Area in square feet	Cost per sq. ft. in dollars	Cost of item in dollars
Land Cost:			
Land cost including all existing houses	134,100	13.55	1,817,100
Construction Cost:			
Demolish existing houses	44,000	.50	22,000
New low rise apartments	301,930	17.00	5,132,800
New underground parking	113,120	8.00	905,000
Total cost of land and construction			7,876,900
Related Costs:			
Consultants fees on new construction			301,900
Insurance			20,000
Real Estate taxes during construction			60,000
Site Services and levys included in construction			—
Marketing fees and commissions			80,800
Landscaping, walks, lights etc.			134,100
Interim financing			379,900
Project contingency			365,000
Total project cost			\$9,218,600
Total cost per gross square foot of buildings			\$ 30.53
Cost of land and demolition per suite			\$ 4,552.
Total project cost per suite			\$ 22,818.

CAROLINE/DUKE BLOCK**Scheme 3.A**

All existing houses are retained and renovated. New low-rise apartments (520 at 747 sq. ft. each) on existing levelled land are built. The landscape bonus is utilized to achieve a F.A.R. of 2.90.

Maximum allowed gross floor area: 388,710 sq. ft.
 Area of remaining houses: 44,000 sq. ft.
 Area of new construction: 344,710 sq. ft.

	Area in square feet	Cost per sq. ft. in dollars	Cost of item in dollars
Land Cost:			
Value of remaining houses	44,000	7.00	308,000
Land cost (excluding value of remaining houses)	134,100		1,509,100
Construction Cost:			
Renovation of remaining houses	44,000	11.00	484,000
Demolition of garages, etc.			3,000
Cost of land and work to existing houses			2,304,100
New low-rise apartment construction	344,710	17.00	5,860,100
New underground parking	156,990	10.00	1,569,900
Total cost of land and new construction			9,734,100
Related Costs:			
Consultants fees			419,900
Insurance			20,000
Real Estate taxes during construction			70,000
Site services and levys in construction costs			—
Marketing fees and commissions			104,100
Legal and other fees			78,200
Landscaping, walks, lighting etc.			134,100
Interim financing			474,000
Project contingency			478,500
Total project cost			\$11,513,000
Total cost per gross square foot of building			\$ 29.50
Cost of land and demolition per suite			\$ 2,902.
Total project cost per suite			\$ 22,098.

CAROLINE/DUKE BLOCK**Scheme 3.B**

All existing houses are retained and renovated. New low-rise buildings to reach the allowable F.A.R. of 2.25, without bonus, are constructed. This produces 404 apartments at an average size of 747 sq. ft. each.

Maximum allowed gross floor area: 301,930 sq. ft.
 Area of remaining houses: 44,000 sq. ft.
 Area of new construction: 257,930 sq. ft.

	Area in square feet	Cost per sq. ft. in dollars	Cost of item in dollars
Land Cost:			
Value of remaining houses	44,000	7.00	308,000
Land cost (excluding value at remaining houses	134,100	11.25	1,509,100
Construction Cost:			
Renovation of houses	44,000	11.00	484,000
Demolition of old garages etc.			3,000
Cost of land and work to existing houses			2,304,100
New low rise apartment construction	257,930	17.00	4,384,800
New underground parking	111,100	9.00	1,090,800
Total cost of land, alterations and new construction			7,779,700
Related Costs:			
Consultants fees			332,200
Insurance			20,000
Real Estate fees during construction			60,000
Site services and levys included in construction			—
Marketing fees and commissions			80,800
Legal and other fees			60,600
Landscaping, walks, lighting, etc.			134,100
Interim financing			380,300
Project contingency (5% 7,300,000)			365,000
Total project cost			\$9,202,700
Total cost per gross square foot of building			\$ 30.48
Cost of land and demolition per suite			\$ 3,743.
Total project cost per suite			\$ 22,779.

CAROLINE/DUKE BLOCK**Scheme 4**

All existing houses are retained and renovated. Three and four storey apartment buildings are built on the vacant land, yielding a gross area of 190,400 sq. ft. (F.A.R. is 1.42). This accommodates 255 units of an average area of 747 sq. ft.

Area of existing houses	44,000 sq. ft.
Area of new construction	146,000 sq. ft.
Resultant gross floor area	190,400 sq. ft.

	Area in square feet	Cost per sq. ft. in dollars	Cost of item in dollars
Land Cost:			
Value of remaining houses	44,000	7.00	308,000
Land cost (excluding value of houses)	134,100	11.25	1,509,100
Construction Cost:			
Demolish existing garages, etc.			3,000
Improvements to existing houses	44,000	11.00	484,000
Cost of land and work to existing houses			2,304,100
New low rise apartments	146,400	17.00	2,488,800
New underground parking	71,400	8.00	571,200
Total cost of land alterations and new construction			5,364,100
Related Costs:			
Consultants fees			201,400
Insurance			15,000
Real Estate and taxes during construction			30,000
Site services and levys, inclusive in construction			—
Marketing fees and commissions			51,000
Legal and other fees			38,300
Landscaping, walks, lighting, etc.			134,100
Interim financing			254,700
Project Contingency			225,000
Total project cost			\$6,313,600
Total cost per gross square foot of building			\$ 33.16
Cost of land and demolition per suite			\$ 5,930.
Total project cost per suite			\$ 24,759.

12

Revenue

The following table presents a summary of comparative rents for the schemes on the demonstration blocks. Rents are Fall 1974 rates indicating the effects of physical form (schemes 1 to 4) and the effects of the landscape bonus (parts A and B) for each Caroline/Duke alternative.

The different physical configuration for schemes 1, 2 and 3 only varies the rent required (to produce the same rate of return to the developer) by 5% and the premium of approximately 10% for scheme 4 over 1 is mainly the result of a substantially reduced number of suites, which increases the land cost per suite.

1. The rents shown for each of the apartments in each of the schemes is based upon the total project costs included in this report and, in addition, the mortgage is assumed to be for 90% of the total project cost and is assumed to be for a 30 year term at 9%. While we are fully aware that this rate of interest does not prevail at the time this report is being prepared, a prudent investor would be very reluctant to invest in a project of this nature at interests rates above 9%. Indeed the interest rates are raised to discourage development and past experience has shown that periods of excessive interest rates do not last for more than six months to a year before easing back to tolerable levels.

2. The rents have been assumed to escalate at a rate of 4% per annum.

3. The rents shown for each apartment in each scheme are for the fall of 1974 assuming the construction starts immediately and the suites become available at that time.

4. All the schemes show a free and clear rate of return before taxes of 7.34% in the first year. This rate of return in-

Bay/Charlton Monthly Rents

Unit Type	Scheme	1	2	3	4
Bach.		165.30	169.50	167.25	177.90
1 Br.		188.10	192.90	190.30	202.45
2 Br.		228.00	233.80	230.70	245.40
3 Br.		273.60	273.60	276.80	294.45
Parking		13.70	14.05	13.85	14.75

Caroline/Duke Monthly Rents

Unit Type	Scheme	1-A	1-B	2-A	2-B	3-A	3-B	4
Bach.		160.60	165.85	166.20	169.40	165.80	169.20	179.25
1 Br.		181.50	188.75	189.10	192.80	188.65	192.55	203.95
2 Br.		220.00	228.75	229.25	233.70	228.65	233.40	247.20
3 Br.		264.00	274.50	275.10	280.50	274.40	280.10	296.65
Parking		13.20	13.70	13.70	14.00	13.70	14.00	14.85

Bay/Charlton**OPERATING STATEMENT FOR SCHEME 1**
Income Fall 1974

Bachelor Suites:	165.30/mth.	10 No.	1,983.60	19,836.
1 Bedroom	188.10/mth.	97 No.	2,257.20	218,948
2 Bedroom	228.00/mth.	79 No.	2,736.00	216,144
3 Bedroom	273.60/mth.	12 No.	3,283.20	39,398
Parking	13.70/mth.	198	164.60	32,551
				<u>526,877</u>
			less 2% Vacancy	<u>- 10,538</u>
Total Income		167,240 sf 2.98		516,339
			less operating expenses	
		167,240 sf 1.05		<u>175,602</u>
			1.93	340,737

Expense ratio: 35.25%

1975 Free & Clear Rate of Return	340,737 ÷ 4,643,400	7.34%
1976 Free & Clear Rate of Return	354,366 ÷ 4,643,400	7.63%
1977 Free & Clear Rate of Return	368,541 ÷ 4,643,400	7.94%
1978 Free & Clear Rate of Return	383,614 ÷ 4,643,400	8.25%
1979 Free & Clear Rate of Return	398,614 ÷ 4,643,400	8.58%
1979 Cash Flow after taxes	approx.	46,000

Caroline/Duke**OPERATING STATEMENT FOR SCHEME 1A**
Income February 1974

Bachelor Suites:	160.60/mth.	193 No.	1,927.20	371,950.
1 Bedroom	181.50/mth.	262 No.	2,178.00	570,636
2 Bedroom	220.00/mth.	156 No.	2,640.00	411,840
3 Bedroom	264.00/mth.	12 No.	3,168.00	38,016
Parking	13.20/mth.	498 No.	158.40	78,832
				<u>1,471,274</u>
			less Vacancy 2%	<u>- 29,245</u>
Total Income		465,220 sf 3.10		1,441,849
Expense ratio: 33.88%		465,220 sf 1.05		<u>488,481</u>
Net income before taxes		465,220 sf 2.05		953,368
1975 Free & Clear Rate of Return		953,368 ÷ 12,994,000		7.34%
1976 Free & Clear Rate of Return		991,500 ÷ 12,994,000		7.63%
1977 Free & Clear Rate of Return		1,031,162 ÷ 12,994,000		7.94%
1978 Free & Clear Rate of Return		1,072,410 ÷ 12,994,000		8.25%
1979 Free & Clear Rate of Return		1,115,300 ÷ 12,994,000		8.58%
1979 Cash Flow after taxes		approx.		130,000

creases to approx. 8.50% in the 5th year, 10.0% in the 10th year and approx. 20% in the 30th year. The free and clear return on investment is the net income before depreciation interest and income taxes, and is expressed as a percentage by dividing by the total project cost. As deductions are not made for depreciation, financial charges or income tax, this return is related to the intrinsic qualities of the project.

5. The cash flow after tax is equal to the net income after tax with an add back of depreciation less the principal payment.

13

Alternative A Low Rise Developed

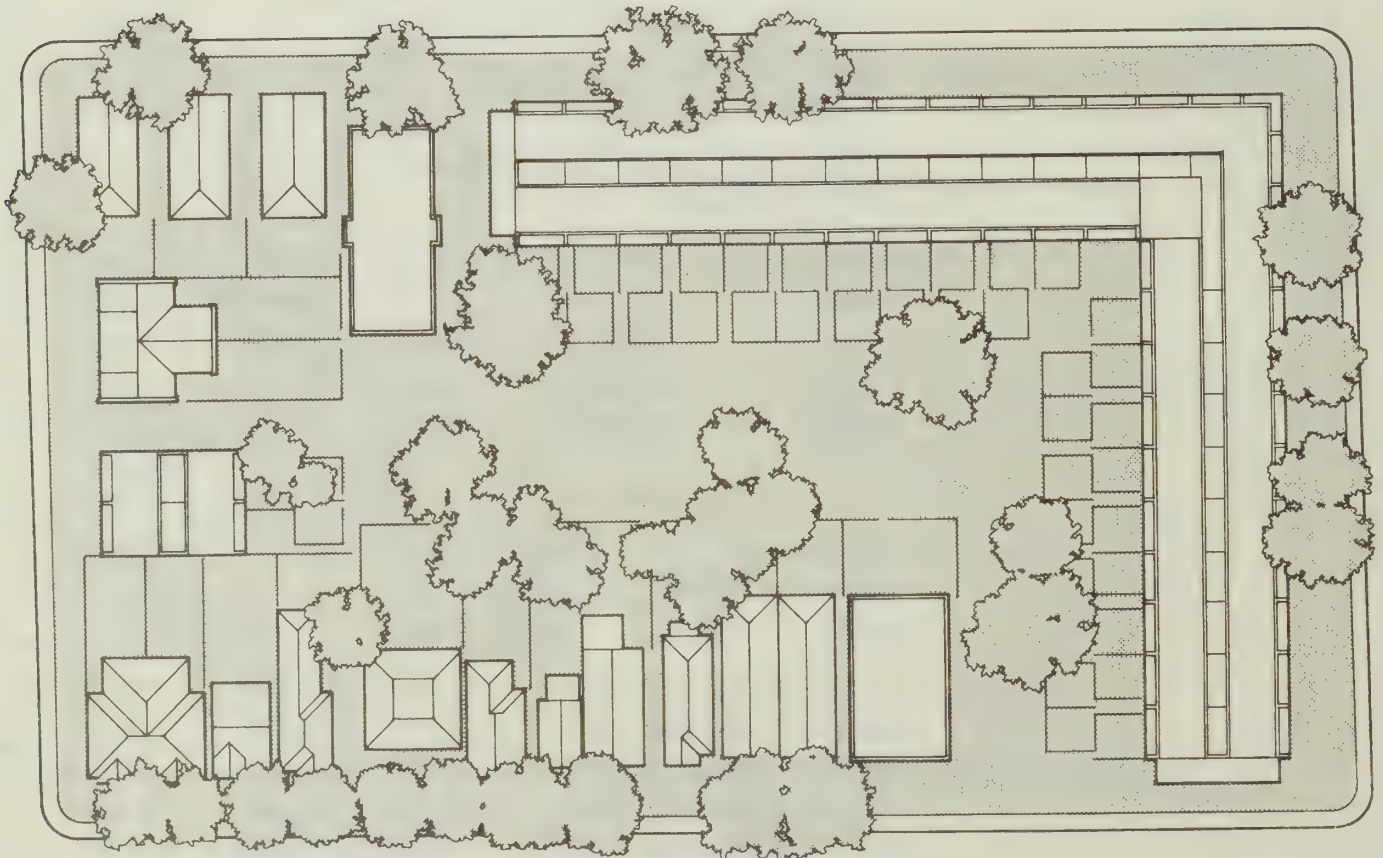
On the preceding pages, the various forms of development have been examined, and illustrated in visual as well as economic terms. For the purpose of studying the feasibility of each scheme, the axonometric three-dimensional drawings of Section 10 are sufficient.

However, as we readily admit, these drawings do not convey the visual impact of each development except as masses. While this is valuable in allowing one to judge the scale of a high rise versus a low rise alternative, it does not really give an accurate impression of how, for

instance, a four storey terrace housing scheme would appear on that site from the street. The diagrams also do not illustrate the architectural organization of the apartments.

It is surely unnecessary to depict in detail such a high rise apartment development. This form of building is all too familiar in Central Hamilton. Decoration notwithstanding, these towers are remarkably alike, and are available for inspection.

Duke Street



Robinson Street

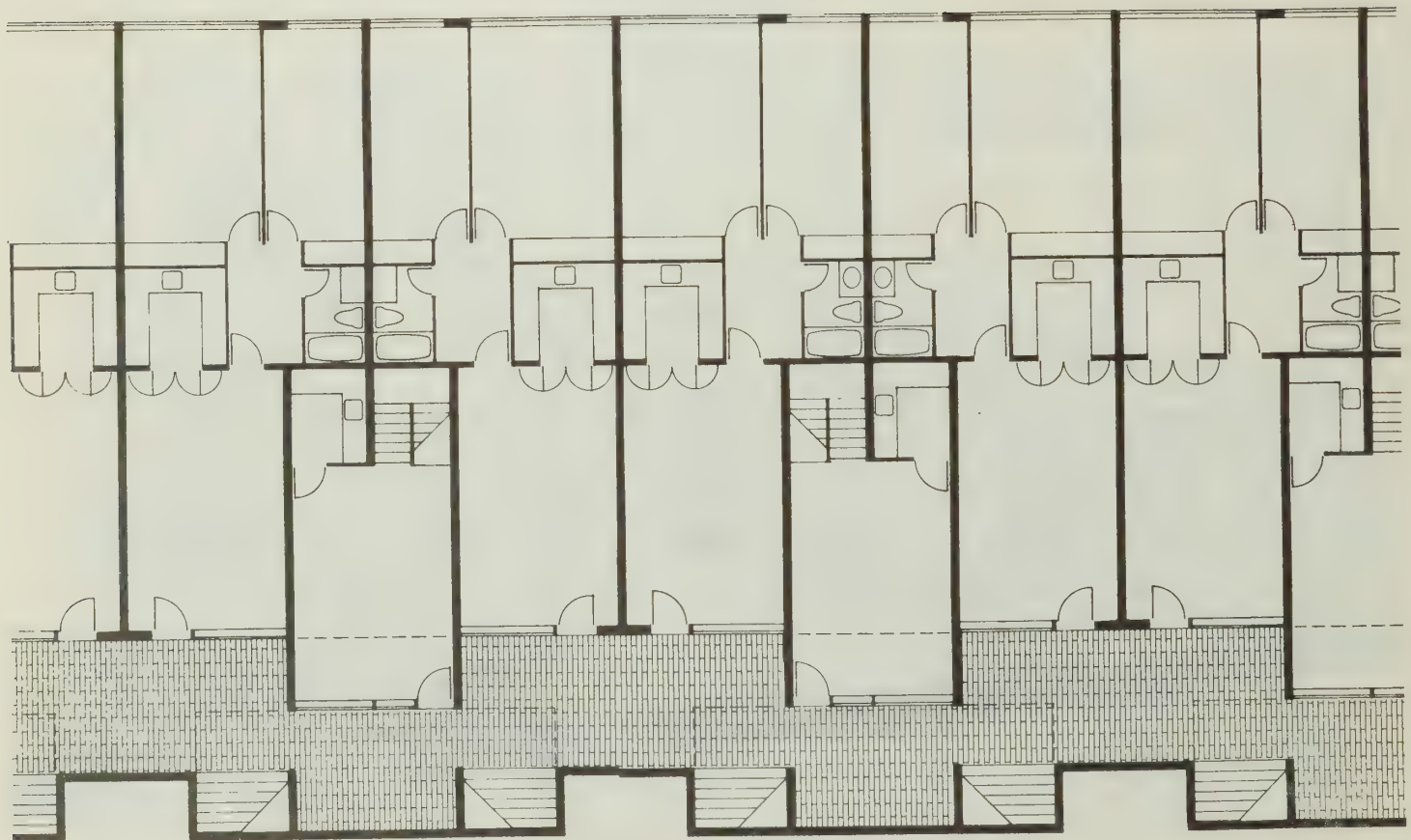
Good examples of low rise medium density housing are not however in abundance in Hamilton nor in most North American cities. Illustrations of this type of housing are needed to show that alternatives to high rise or suburbia **do exist**. That is the point of this section.

The site plan and street perspective below, and the floor plans on the following pages represent such an alternative. The site chosen was the Caroline/Duke Study Block.

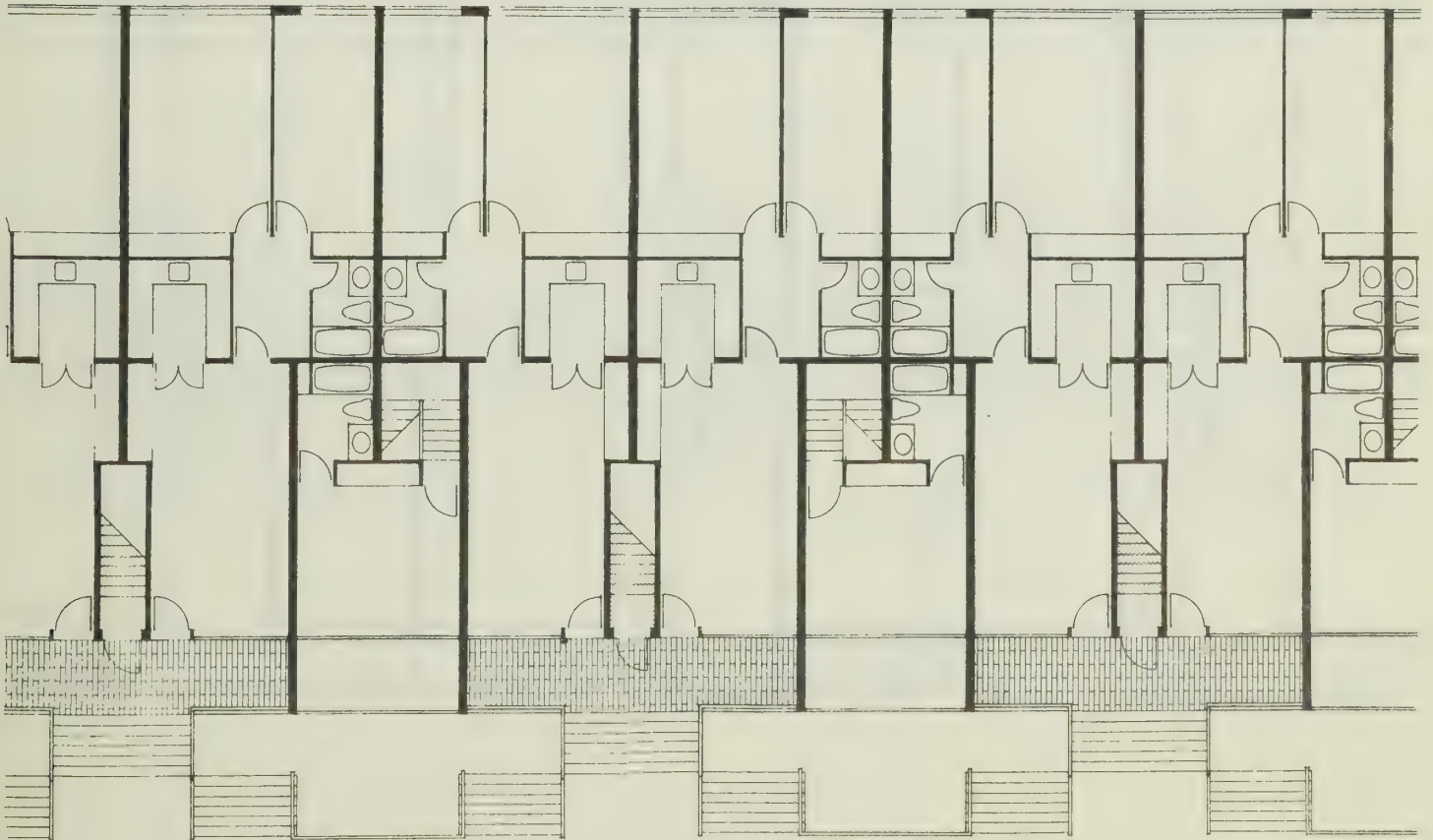
The basis for the design was the Scheme 4 developed in Section 10. The criteria for this scheme were to keep the building height to a minimum, to retain as many of the existing houses as possible, and to provide units in the same proportion or program mix as now exists in that area of downtown Hamilton. Underground parking is provided for all units, both in the renovated and in the new construction.



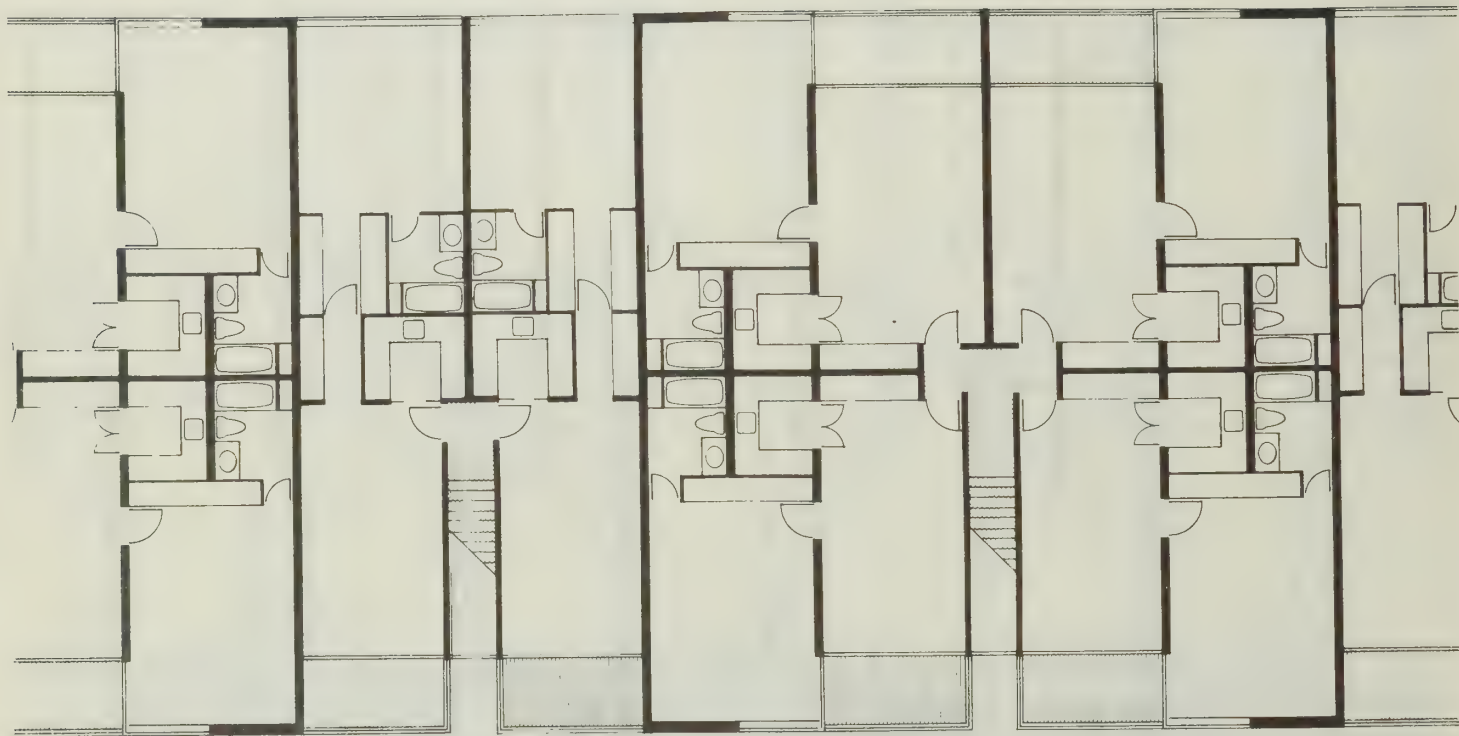
The ground floor is set half-level below grade. Thus, the floor level is about four feet below the street, and is entered from a sunken court a few steps down from the sidewalk. Both this floor and the first floor above have access to private gardens at the rear, and thus are suitable for family units. These floors therefore, contain all the two-bedroom units required in the new construction and some one-bedroom units at the front.



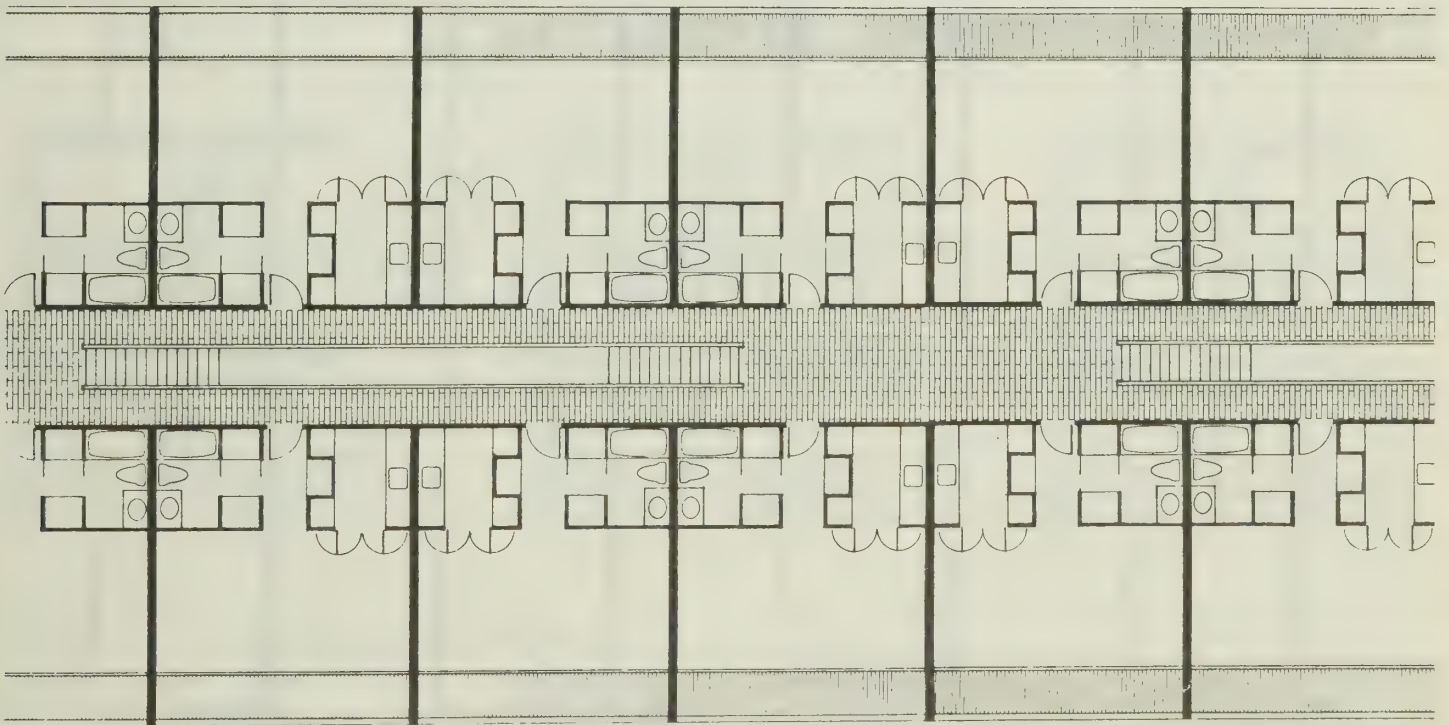
The first floor is also reached directly from the street by a set of steps leading to a front porch. This level contains two-bedroom apartments with access to the backyards, and the rear common beyond. Also contained are the upper loft of the one-bedroom apartments which are over the ground floor living areas.



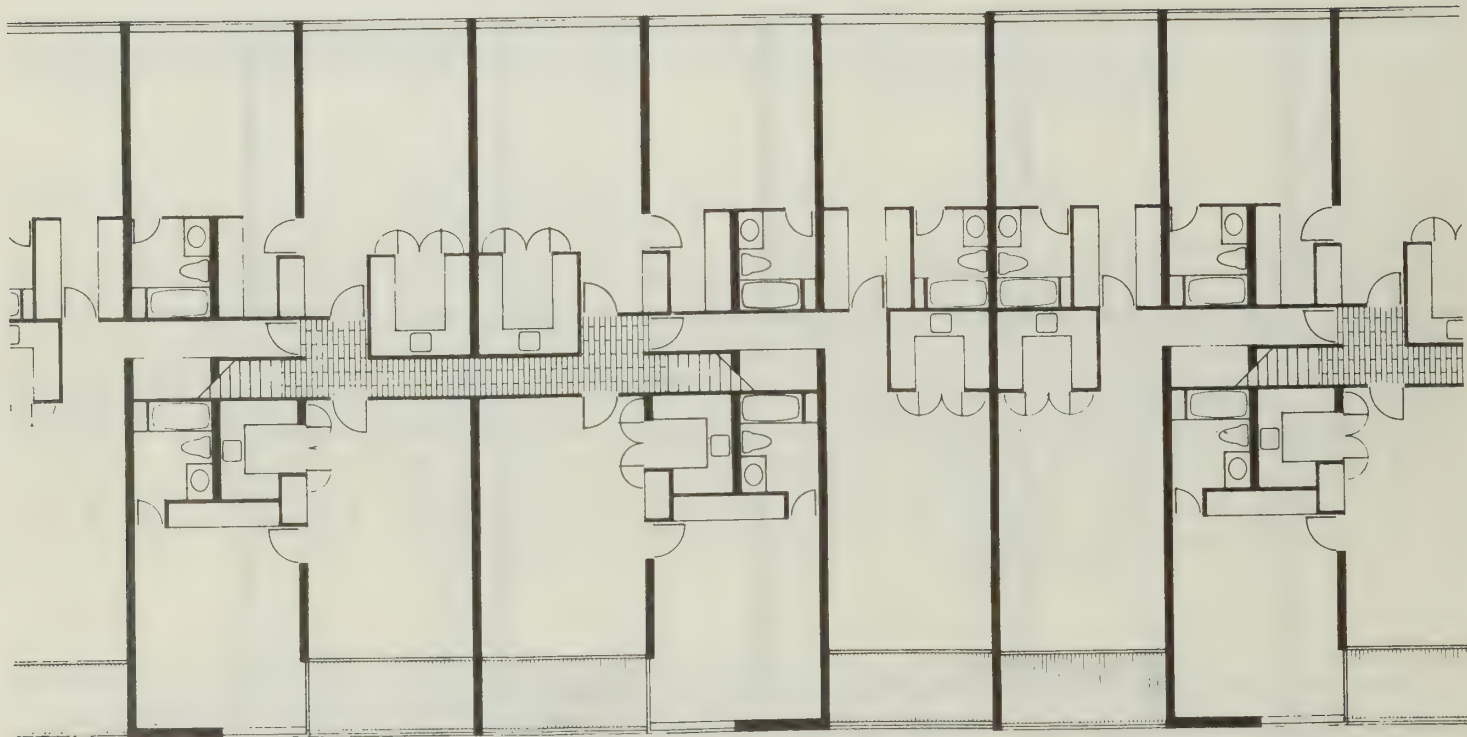
The second floor contains only one-bedroom apartments. These are entered from a series of stairs every forty-two feet, which lead from the front porch to this level. Thus, the first three floors of this building all gain access directly from the sidewalk.



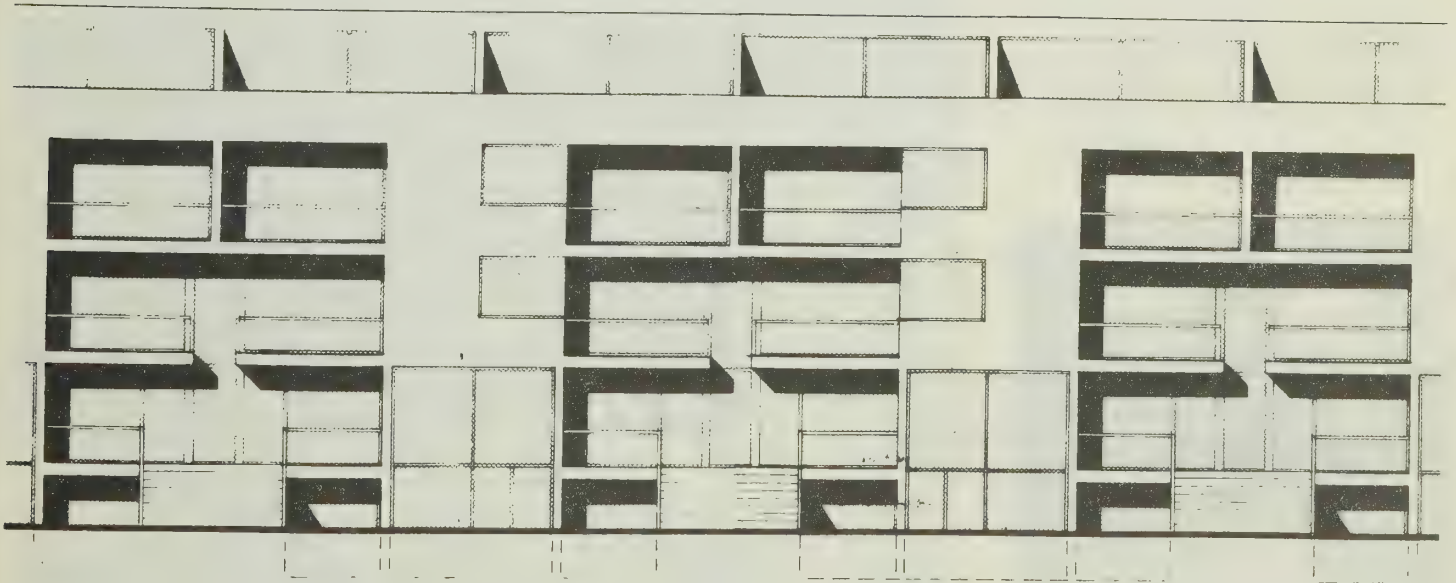
The fourth floor is composed completely of bachelor apartment units, each twenty-one feet wide, on both sides of the building. Access to these units is from a central corridor, which connects with stairs and elevators every 200 feet. Since this is the upper level, the corridor is skylit by a continuous sloped glass roof along its entire length. Stairways to the third floor occur at regular intervals. Since they are open, sunlight penetrates down to the third floor.



The third floor is also solely for single bedroom apartments, and these are arranged in a similar manner to those on the second floor. Every third unit is a through unit (a unit which has windows on both sides of the building), allowing cross ventilation. The other apartments face either onto the street, or onto the block interior common area. The access to these apartments is via stairways which lead down from the fourth floor.



The Street Elevation reflects the diversity of the architectural plan. The layout of the units inside is evident in the position of the windows and doorways, balconies, and porches. The apparent height of the building is reduced by setting the upper floor bachelor units back, and sloping the dividing walls.

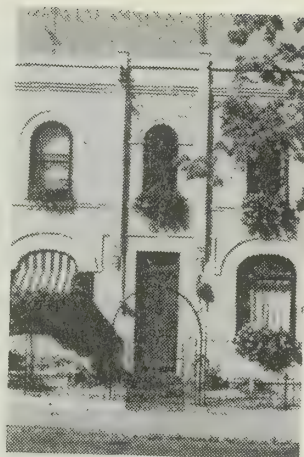


14

Examples of Low Rise Projects

HAZELTON AVENUE, TORONTO is lined with many fine renovated homes. Centrally located in the Yorkville district, this area has been transformed in recent years from a street of shabby and dilapidated but structurally sound houses to a very desirable residential neighbourhood.





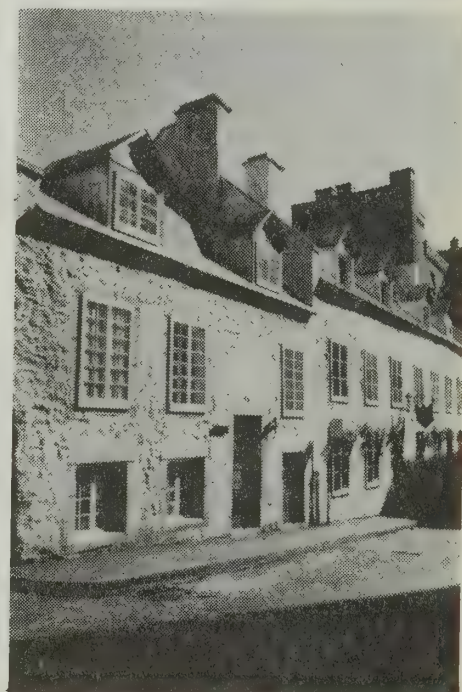
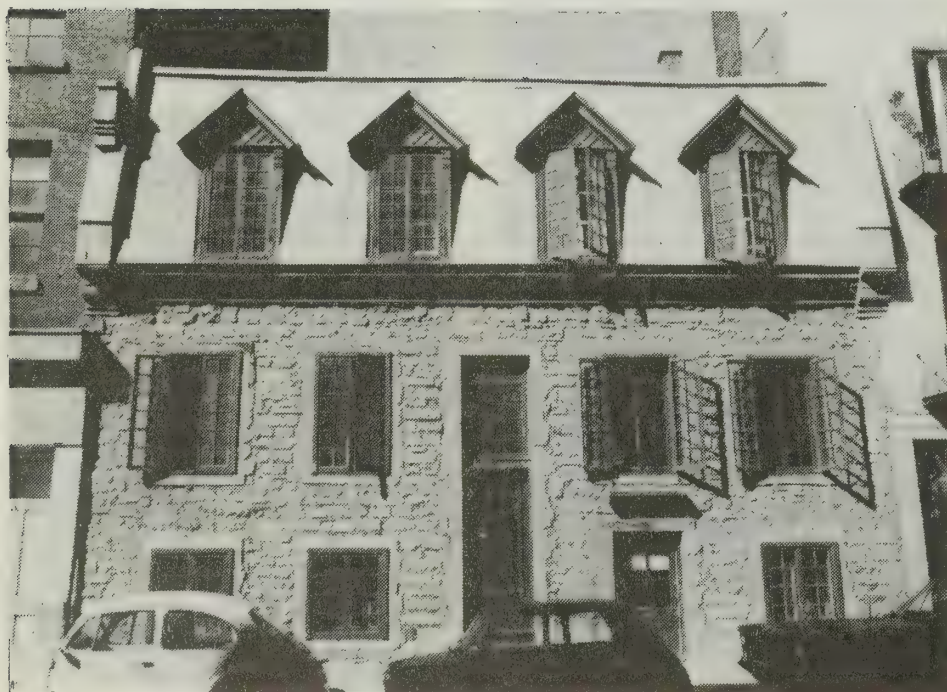
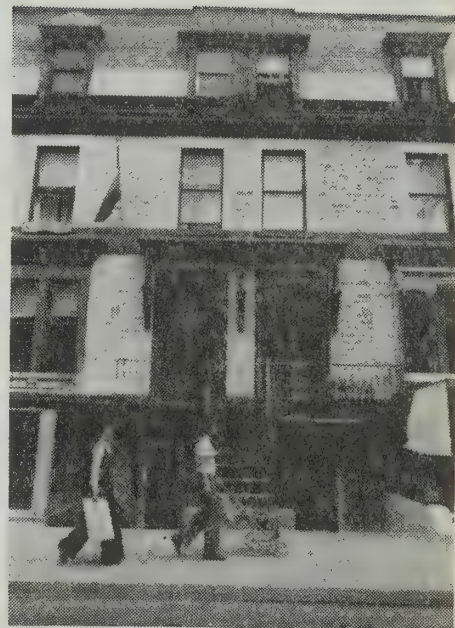
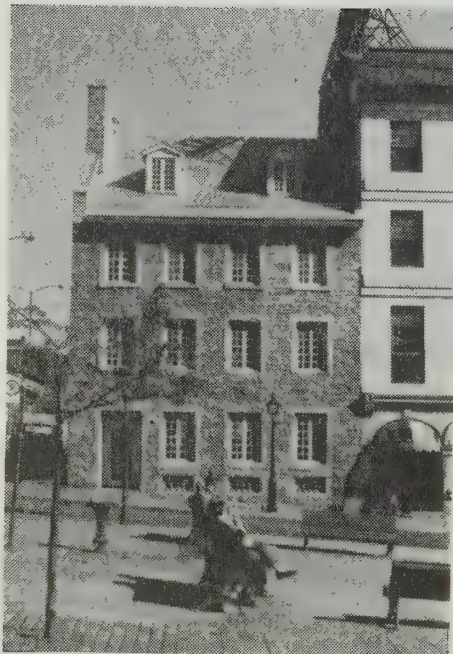
BELMONT STREET, TORONTO is a well preserved and imaginatively renovated row of two storey houses off Yonge Street. The scale and location make these valuable houses



MONTEITH STREET, TORONTO presents a good example of renovated terrace housing. The three storey height of the houses is reduced in appearance by the use of a mansard roof above the second floor.

MONTREAL'S DOWNTOWN AREA

contains many examples of fine older homes in the process of renovation. Reinforced by the recent interest in 'Old Montreal', the area surrounding Bonsecours Market has shown a revitalization. New restaurants, shops, and offices have been installed in renovated historic buildings. In addition, many of the traditional three and four storey stone houses downtown have been remodeled and subdivided into urban apartments.



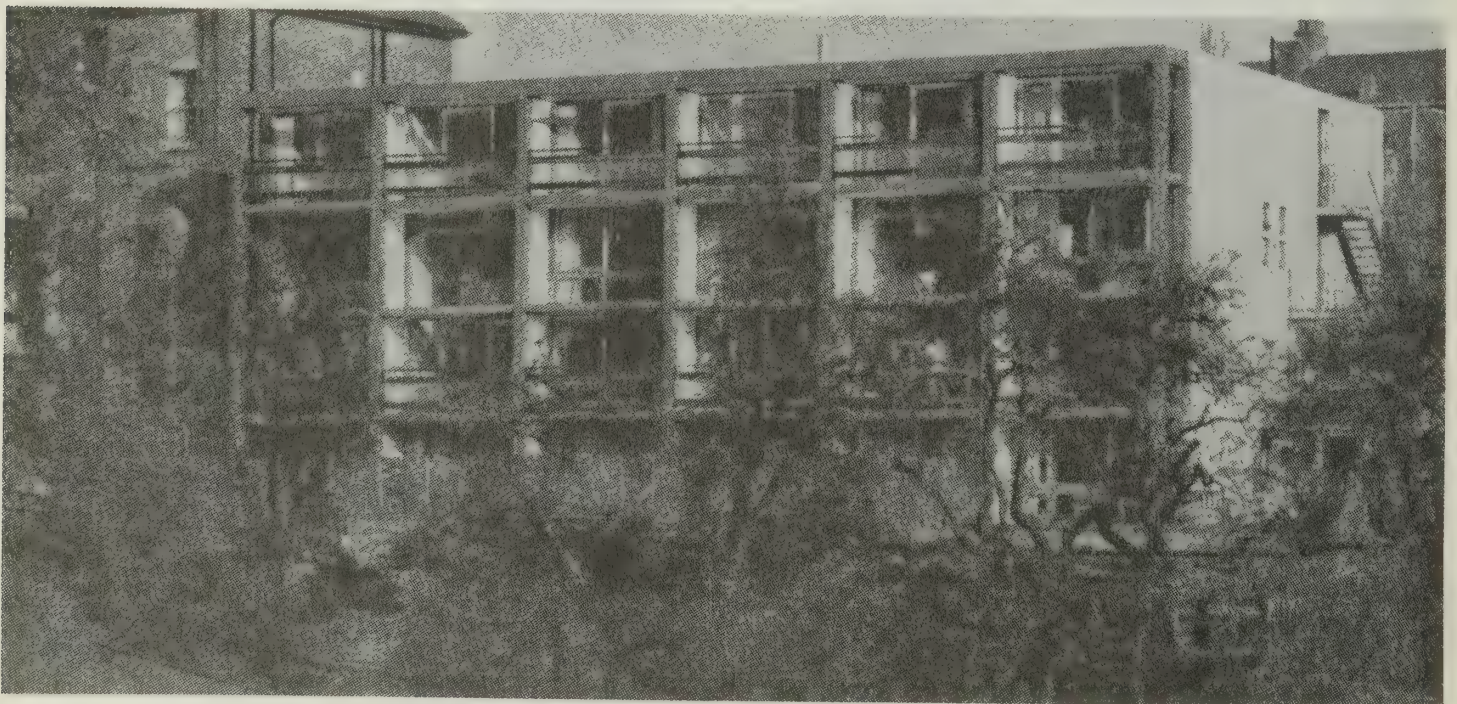


BATH, ENGLAND Formed in the shape of a crescent, this 19th century development is an example of fine terrace housing. Although it appears only three storeys in height, it in fact contains four levels of accommodation: the basement apartments are accessible from the street, and open onto the rear gardens.



SOUTH HILL PARK PROJECT, LONDON consists of six terrace houses with narrow frontages, but four storeys in height. Two of the houses are occupied by the architects, Amis and Howell.

Due to the slope of the land, the building appears to be only three floors in height from the street. The floor area ratio for the project is 1.0 (the building area equals the site area).

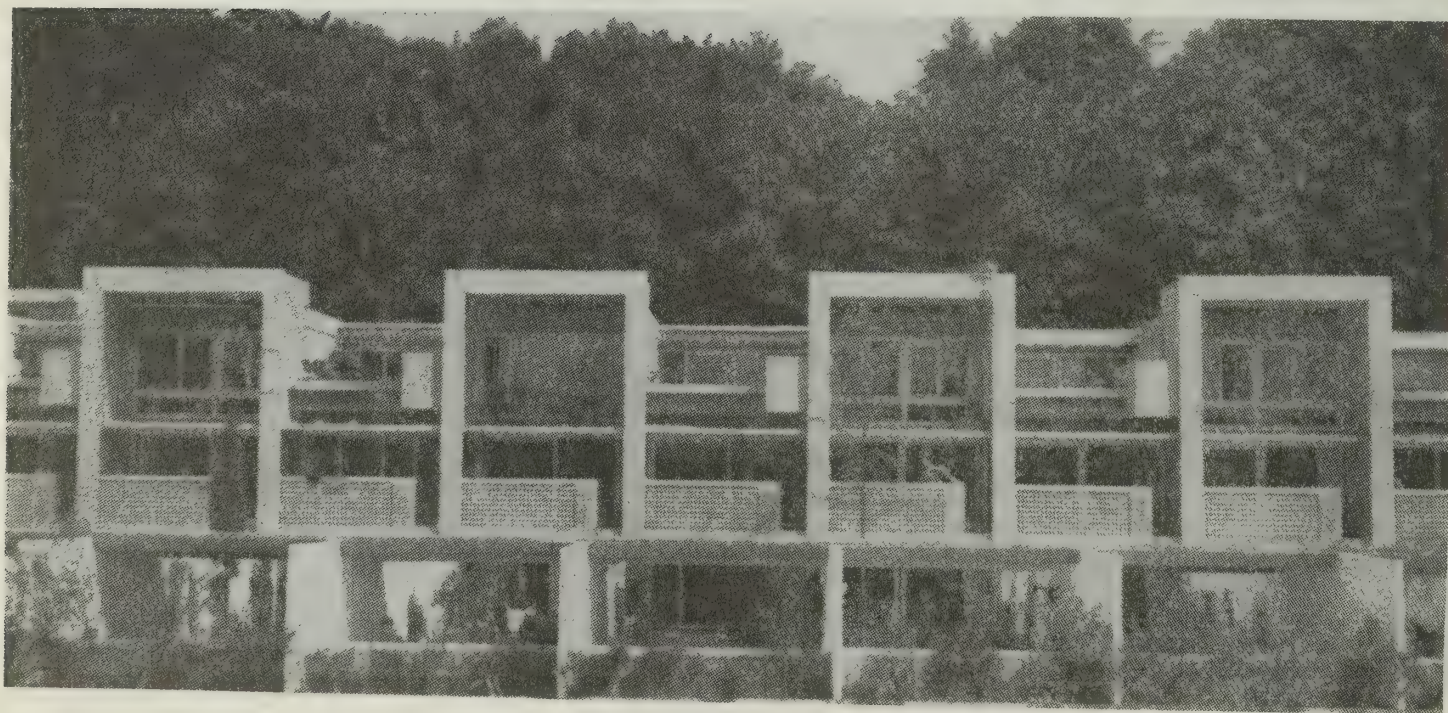
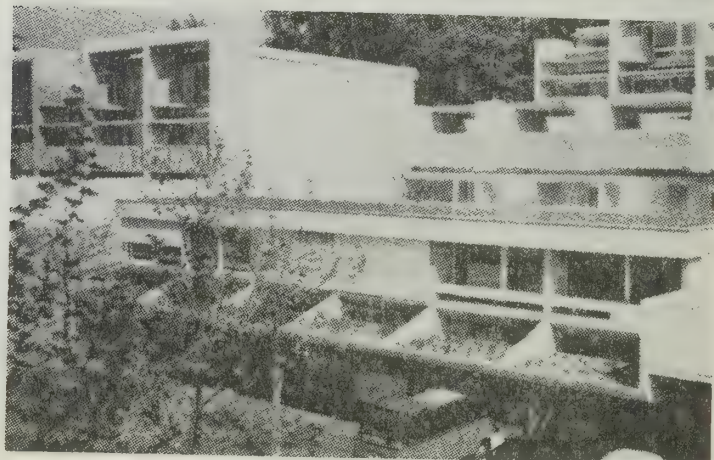
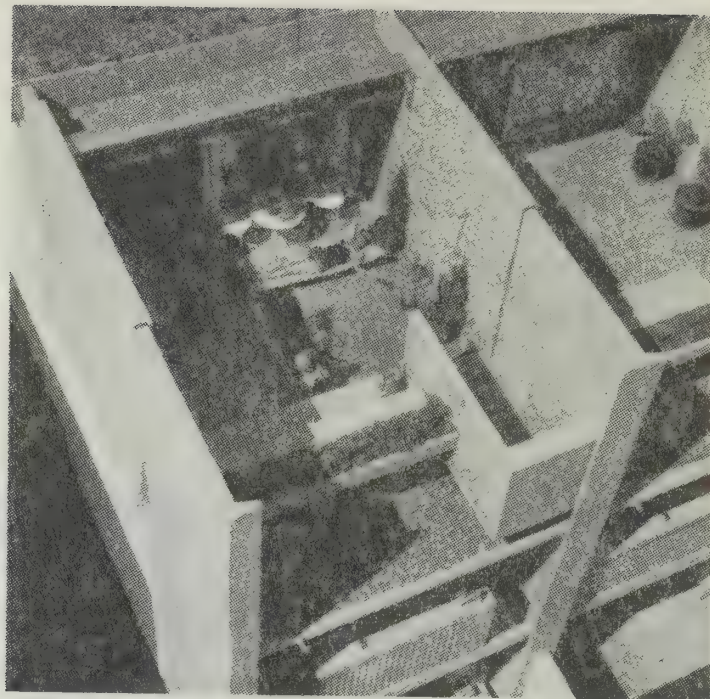


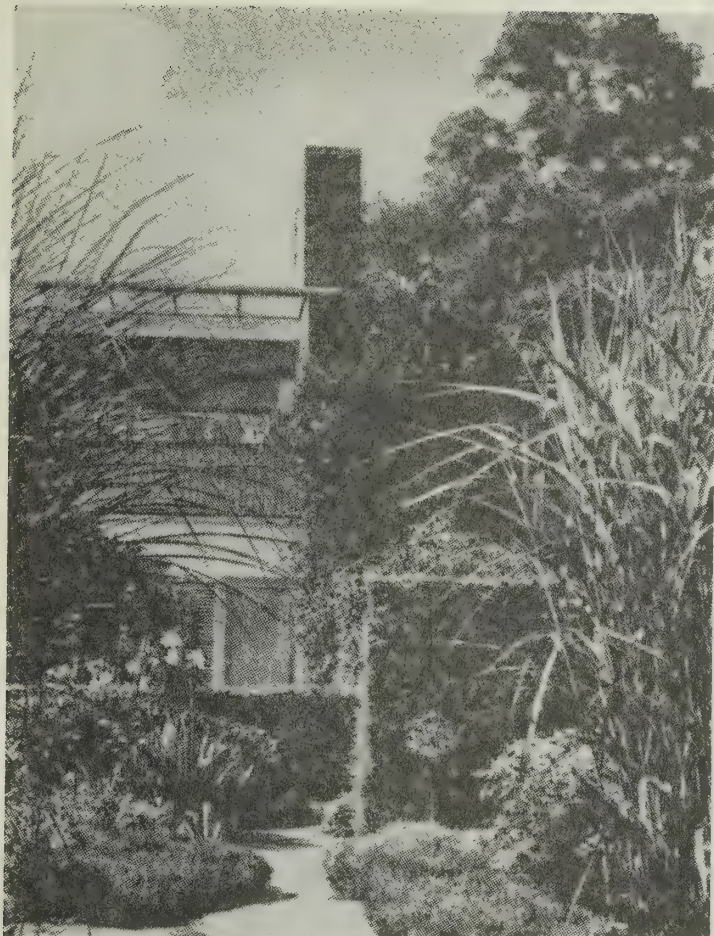


**"CORNER GREEN" ESTATE,
BLACKHEATH, LONDON** was designed
by Eric Lyons, Architect. Twenty-three
two storey houses with garages were
placed around a common which is re-
served for pedestrians. Each house has a
small, secluded garden.

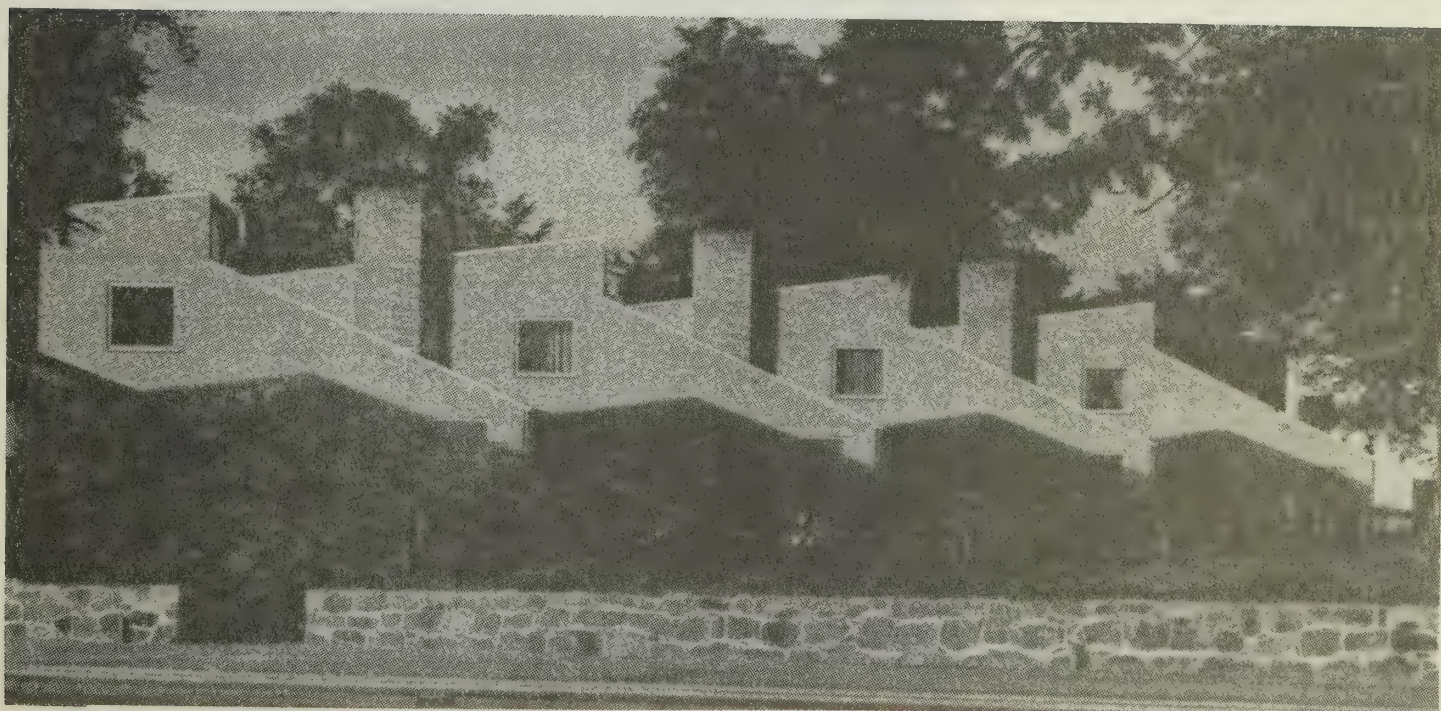


**HALEN HOUSING ESTATE, NEAR
BERNE** was designed by Atelier 5. It is
a successful attempt at putting the idea
of urban low-rise housing into practice.
The concentrated group of buildings on
the south slope is in contrast to the wide,
undulating landscape. Because of the
difference in levels, each house has a
free view over the grass-covered flat
roof of the lower group.





**SOLOLM HOUSING ESTATE,
KLAMPENBORG, DENMARK** by architect Arne Jacobsen is situated in an attractive seaside area north of Copenhagen. The project consists of five terrace houses with 1 1/2 storeys and nine terrace houses with two storeys, as well as the two storey 'chain' houses shown here.



PHILADELPHIA: New infill and mews housing in the Society Hill area has been constructed to blend with the existing neo-Georgian townhouses.

PHILADELPHIA: A new project, designed by I. M. Pei, in Society Hill is built up to the sidewalk as were the older colonial terraces opposite this project. The scheme has a courtyard interior.





COLUMBIA, MARYLAND: Located mid-way between Washington, D.C. and Baltimore, Md., Columbia is a totally new town. The housing is diverse in character and density, but are low-rise in form.

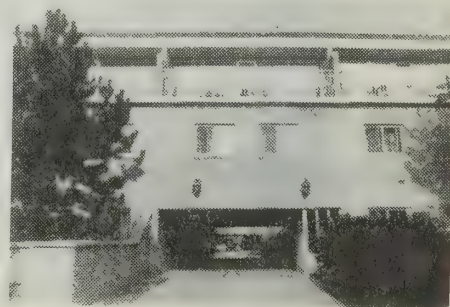


FLEMINGTON PARK, DON MILLS

contains many examples of low-rise medium density housing. Illustrated here is a grouping of four storeys composed of units on two floors, stacked above each other. Entry to the lower units is at grade, while the upper apartments are reached from an internal corridor system.

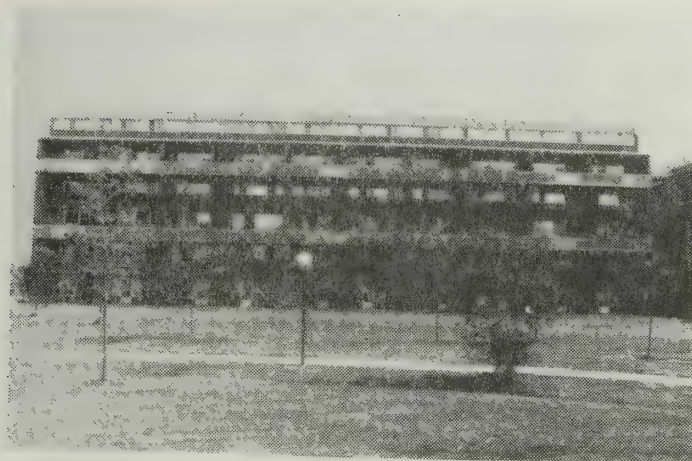


BAYVIEW MEWS, NORTH YORK is a nearby project similar in scale to Bayview Mills. All parking, however, is grouped underground with direct access to the accommodation. The lower two floors house units which can be entered from the exterior walks, while the third floor contains apartments with access from a central corridor.



BAYVIEW MILLS, NORTH YORK is a large new privately developed project. All units are rented, but resemble individually owned houses, with separate garages and private entrances from the street. Height is only three storeys, since the units are not stacked.

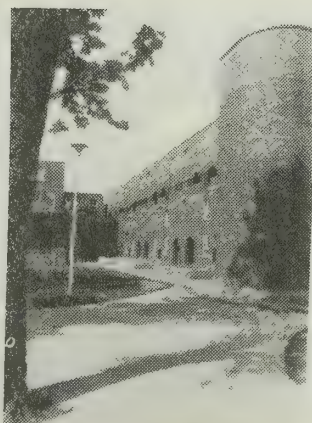




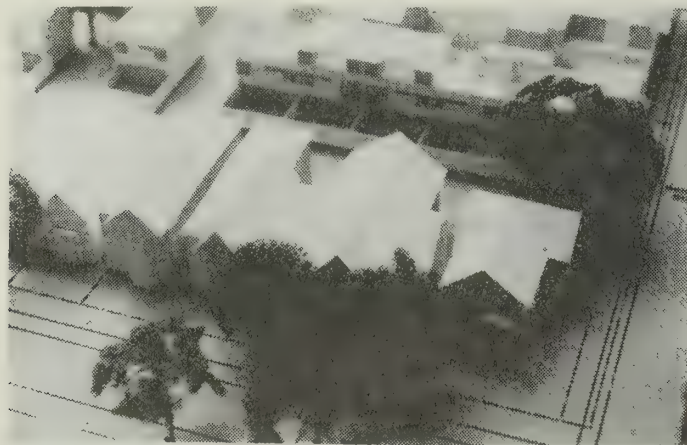
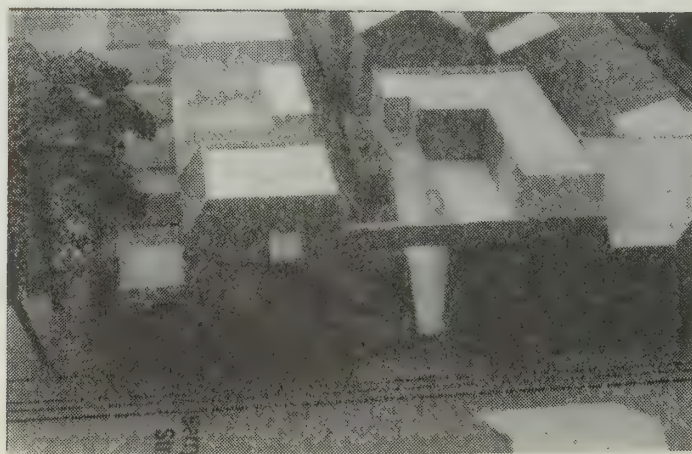
CHAPEL GLEN, DON MILLS a condominium housing project, contains six storey stacked townhouse units. Entry to the apartments on the upper levels is from exterior walkways. The lower units have entrances directly from ground level. Use of an exterior corridor in this way allows all apartments to be through units; that is, the apartment extends from one side of the building to the other. This allows cross ventilation and exposure to the sun. The two storey units only require walkways on every other floor.

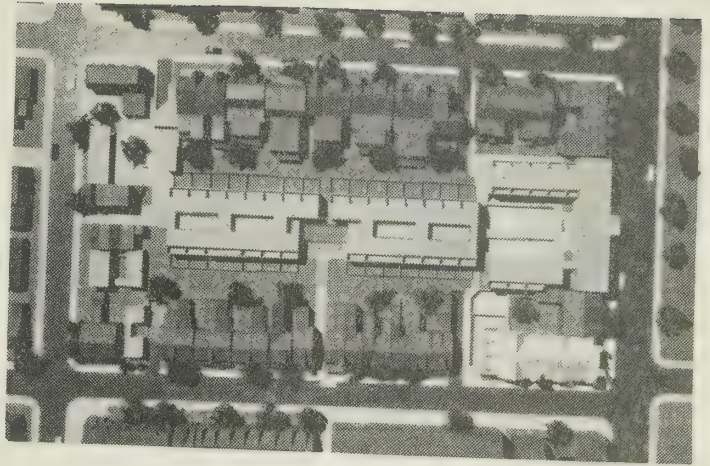
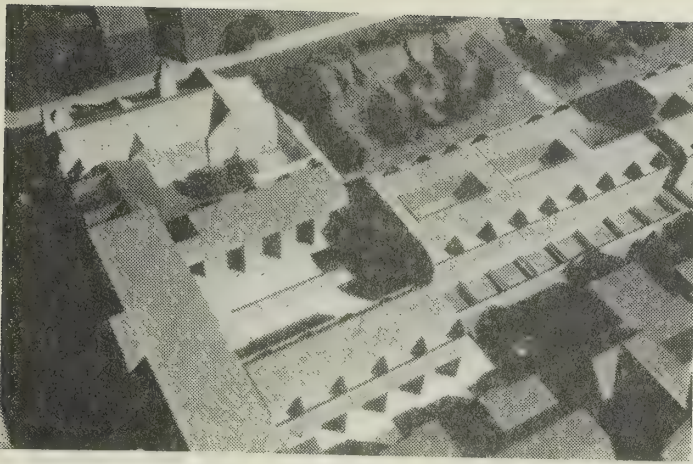


DON MOUNT, TORONTO is an OHC project in the eastern part of the city, which contains a large proportion of family units. In order to achieve a high density of population in a limited space, the townhouses have been, in many places, stacked into four and six storey configurations. Access to the unit is provided by exterior corridors, by stairs and elevators. Building height varies to allow sunlight to enter the interior courtyards.

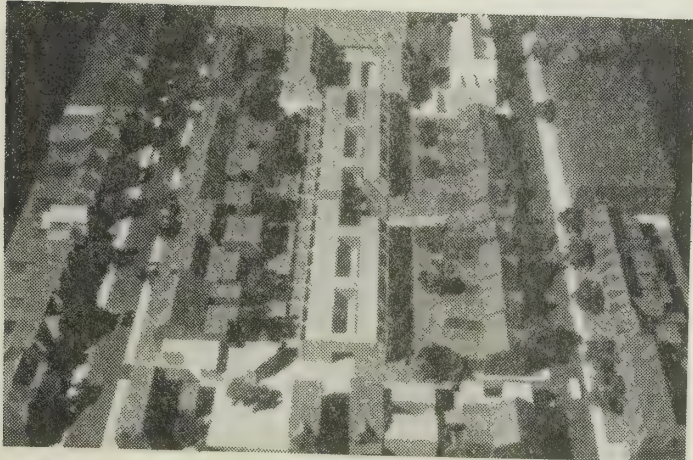


APOGEE HOUSING, TORONTO is a project in the planning stage by Diamond and Myers, and is an example of how existing housing can be augmented with new mews apartments located in former backyard areas. The project is in Yorkville, a historically valuable, centrally located low density neighbourhood. This example illustrates how density of a block can be increased to reach the maximum allowed (in this case, 1.0 F.A.R.) without the destruction of the existing streetscape.

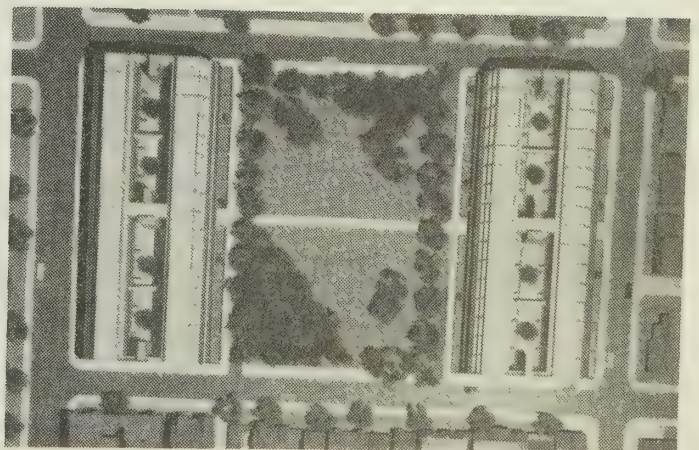
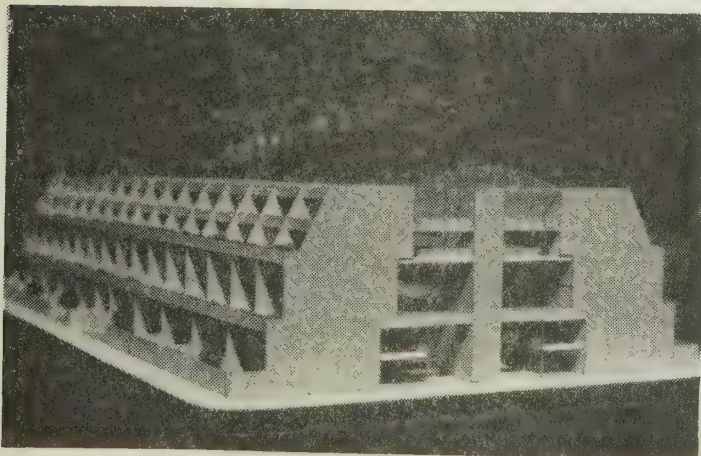
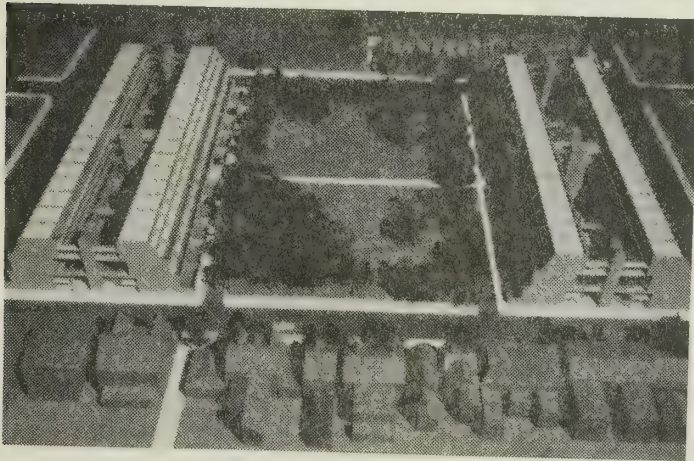




RESIDENTIAL BLOCK DEVELOPMENT, TORONTO is a study of a typical urban block by Diamond and Myers for the CTV "The Human Journey" television series. The object was to find ways to increase the density of the block without displacing the residents or demolishing their homes. A model was constructed to show how new housing, on either side of a skylit walkway, could be built in the existing backyards in place of the dilapidated garages which line the laneway.



A GALLERIA ALTERNATIVE, TORONTO was also part of the CTV study. This shows a proposed low-rise yet high density development for a block without existing houses. In this way, the same number of units can be constructed as with high-rise towers.



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Conclusions

From the study of both sample blocks it can thus be safely concluded that there are indeed feasible alternatives to high-rise. The findings can be summarized as follows:

- (1) High rise does **not** necessarily yield a higher return per dollar invested, it only increases the **volume** of return.
- (2) An investor will obviously make more money on a building that has 125 suites than he will on a building that has 110 suites. But he will also have to risk more money to achieve this return, and the return on equity, especially over a long period, could be lower.
- (3) Whether or not investors should be allowed to concentrate large amounts of equity in high-rise apartment buildings is a question of public policy. Those charged with formulating public policy must decide whether the benefits to the public outweigh the costs to the public.
- (4) The benefits to the public are marginally lower rents. The costs to the public are higher concentrations of people causing a strain on existing services, often creating a need for new services, and an urban landscape that many people find harsh and alienating in itself, and a disrupting physical influence on lower density surroundings.
- (5) A concentration of high density development creates an imbalance in the neighbourhood make-up, weighting it in favour of tenants, the young and childless couples.
- (6) These development alternatives do not create low cost housing. The creation of low cost housing must be dealt with by other means.
- (7) This report **does** prove that a developer can build low rise buildings without significantly raising rents while maintaining as good a return on investment as he would with high-rise buildings.
- (8) The bonus system provides no effective benefit to the public, and is unnecessary in encouraging development.
- (9) If it is desirable to change the development policy in Hamilton, then the policy makers must begin making those changes immediately. A delay will mean that the option of alternative development will become an academic exercise. The opportunities for reconsideration of forms of development diminish almost daily. High-rise apartments will soon replace all of the available housing stock in the E and E3 districts.

This would be a tragedy not only for the Durand Neighbourhood but a loss to everyone who lives in Hamilton.

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Appendix

Financial Model

1. Land & Related Costs

- (a) Land only (deduct value of buildings to be retained from acquisition costs)
 - (b) Related Costs:
 - Value of existing buildings to be retained
 - Carrying charges for land and buildings
 - Transfer tax
 - Registration of Deed
 - Security
 - Demolition
- Total of Land and Related Costs.

2. Construction and Related Costs

- (a) Construction Costs
 - New construction above grade
 - New construction below grade
 - Renovation
 - Cost escalation to date of construction start
 - (b) Related Costs
 - Architect fees for renovation
 - Architect fees for new construction
 - Real Estate taxes during construction period
 - Insurance during construction period
 - Leasing fees and commissions
 - Landscaping and external work
 - Interim financing.
 - Finance charge (mortgage)
 - Project Contingency (5% of construction costs)
- Total Construction and related costs
- Total Project Costs

B. Costs

1. Annual Revenue

- Revenue at current rates for all categories of accommodation
 - Quantity unit amount.
 - Bachelor
 - Studio
 - 1 bedroom apartment
 - 2 bedroom apartment
 - 3 bedroom apartment
 - Commercial space
 - Parking
- Total Annual income current
- Total Annual income at date
of occupation

2. Annual Operating Expenses

Expenditure at current rates

Taxes
Insurance
Water
Hydro
Heat
Payroll
Maintenance New Construction
Existing Construction
Elevator
Management
Contingency (3% of gross expense)

Total annual operating expenses

Total annual operating expenses
at date of occupation

3. Principal and Interest

Total project cost as at commencement of construction (less any mortgage deductions for (i) work in existing buildings and (ii) CMHC forgiveness in non-profit situations)

Total mortgage proceeds

Annual Principal and Interest

Annual income 1st year of operation less

Annual operating expenses 1st year of operation

Less Annual principal and interest

Calculate cash flow in subsequent years, taking into account both rent and operating cost escalators.

The percentage net free and clear rate of return is the annual income less operating expenses, divided by the total project cost, multiplied by 100.

$$\frac{B(1) - B(2)}{A} \times 100$$

(compare rate of return to current mortgage interest rates).

The cash flow in the private sector for the first operating years may be a negative one. However, as the revenues increase more rapidly than operating expenses, and principal and interest remain constant, the cash flow will become positive after say 3 or 4 years.

